ESD-TR-66-78

MTR-53

CLOUD DROPLET MICROWAVE DISPERSION EFFECTS ON LINE INTEGRAL REFRACTOMETER MEASUREMENTS

OCTOBER 1966

L. J. Galbiati

Prepared for

DIRECTORATE OF AEROSPACE INSTRUMENTATION
ELECTRONIC SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
UNITED STATES AIR FORCE
L. G. Hanscom Field, Bedford, Massachusetts

Project 705A

Prepared by
THE MITRE CORPORATION
Bedford, Massachusetts
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ABSTRACT

The magnitude and characteristic of the effect of cloud-droplet microwave dispersion on line integral refractometer (LIR) measurements was determined for environmental conditions measured at the Eastern Test Range on August 7, 8, and 9, 1963.

It was definitely determined that the presence of cloud droplets would introduce errors in the LIR measurements, but that on each of the above days, there were regions of the sky where the error introduced was small compared to the total refraction correction.

The report describes technical areas where basic data were inadequate and discusses the impact of assumptions made in these areas on the calculated values.

Basic work in this area at The MITRE Corporation in 1962 is described in Appendix I.

REVIEW AND APPROVAL

This technical report has been reviewed and is approved.

Clement V. Horrigan

CLEMENT V. HORRIGAN
Acting Director
Aerospace Instrumentation

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SECTION I

INTRODUCTION

The National Academy of Science Ad Hoc Panel on Electromagnetic Propagation reported in 1962 that atmospheric-refraction effects were one of the major limitations of missile-range metric-measurement capability.

In 1963 work was initiated at The MITRE Corporation on a new approach to solve this problem, the line integral refractometer (LIR) technique. This approach utilizes the differential phase shift between two coherent signals, 15.6 and 31.2 gHz, as a measure of the integral of the water vapor component of the refractive index over the actual transmission path. Two other coherent signals, 45 and 90 gHz, are used in a similar manner to measure the effects of the dry constituents of the atmosphere.

Basic theoretical studies indicated that water droplets in clouds would induce error in the LIR measurements; however, field tests were undertaken to determine the feasibility of utilizing this technique to meet current and future Air Force needs.

Some experimental data concerning the magnitude of the water-droplet effect on the differential phase measurements at 15.6 and 31.2 gHz were obtained during a field test of the LIR at Lake Winnepesaukee, New Hampshire. The amount of applicable data was limited because the occurrence, frequency, and the type of clouds in the fixed measurement path was one of the uncontrollable variables encountered during the relatively short testing period. While the test results confirmed that the effect predicted by theory was indeed present, the results did not provide much information concerning the magnitude of the effect to be

expected for an LIR measurement system at the Air Force Eastern Test Range (ETR).

No attempt was made to determine how the cloud structure prevailing on the 3 days in August, 1963, compares with that prevailing during other times of the year; while such data may be available, it was considered to be beyond the scope of this study. However, Dr. Robert Cunningham (AFCRL) has indicated that a cloud pattern of scattered small cumulus clouds over the land area and only a few small cumulus clouds (or none at all) over the water is typical for a very high percentage of the days in the Florida ETR area. A photograph (Figure 1), taken from Gemini in July, 1965, shows a similar cloud pattern.

A brief summary of the LIR feasibility test-result conclusions is included from the final report [1]. The test program demonstrated that it is feasible to use the microwave dispersivity at 15.6 and 31.2 gHz as a precise measure of the integrated refractivity of the more variable component of the atmosphere, water vapor. Measurements were also made at 45 and 90 gHz to obtain information concerning the oxygen in the atmosphere.[1]

The 2 ppm accuracy of the LIR technique represents a significant improvement over other measurement methods, and data analysis indicates that accuracy objectives can be achieved with a smoothing time of 10 to 1000 seconds (with a most probable time of 100 seconds). The 100-second period of time corresponds to a spatial resolution of 200 meters at a typical crosspath veloctiy of 2 meters per second. In general, theory indicates that the integrating time will decrease as the angular rate of a sweeping beam increases.

The field test measurements demonstrated that the LIR technique could be utilized to achieve:

Figure 1. Cloud Distribution at ETR (1965)

(a) a 2- to 10-fold improvement in accuracy over current state of the art,

(b) a 20- to 1000-fold response-time improvement over current state of the art, and

(c) valid measurements in a turbulent atmosphere.

Theory exists to extend the fixed path results to a moving path but experimental verification is necessary. The LIR instrumentation used in the tests was designed for these purposes only and was more elaborate than needed for an operational system; however, equipment modification is possible to yield a further improvement in accuracy and a reduction in size and weight. While the results of the fixed path field test measurements prove the feasibility of the basic technique, they do not afford a confirmation of the rotating/sweeping beam effects.

SECTION II

BASIC ASSUMPTIONS AND DATA

The magnitude of the droplet effect is dependent on the density, temperature, size, and distribution of the droplets.

The calculations are based on the assumption that all the liquid water measured was due to cloud droplets and not rain or ice. If the liquid water had been in the form of rain, the effect would have been much more detrimental; if it had been in the form of ice, the effect would have been less detrimental. In addition, the dimensions of the droplets was assumed to be small compared to the wavelength of the signal. The data used was the only information available with the detail necessary for this study. The visible cloud cross sections for the 3 days are shown in Figures 2, 3, and 4.

The value of the refractive index, n, of a cloud of droplets in the atmosphere as a function of percent volume content of water, may be expressed as

$$\bar{n} = 1 + 1.5\frac{M}{P}\,\frac{\bar{n}_d^{\,2} - 1}{\bar{n}_d + 2} \times 10^{-6} \qquad (1)$$

where

M = the equivalent water density of the atmospheric medium in grams/cm^3,

P = the density of liquid water in grams/cm^3, and

n_d = the refractive index of the water molecule.

The sensitivity of the refractive-index value for normal conditions is about 1.5 refractivity (N) units per 1 microgram per cm^3 value change of equivalent water density. The value of n_d for normal conditions is on the order of 7.

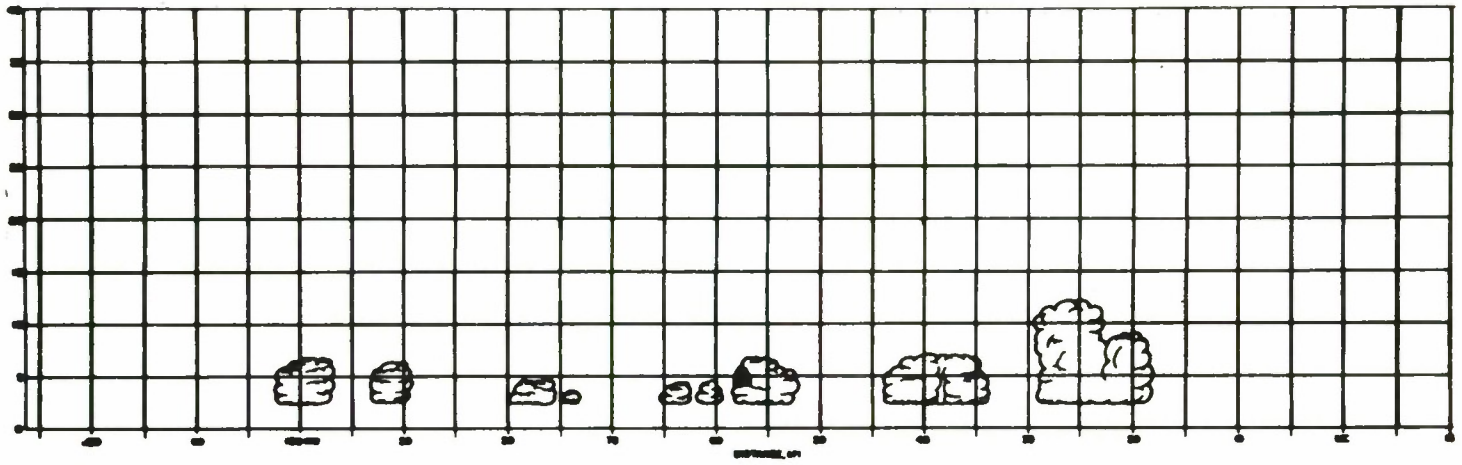

Figure 2. Cloud Cross Sections for August 7, 1963, Valkaria, Florida

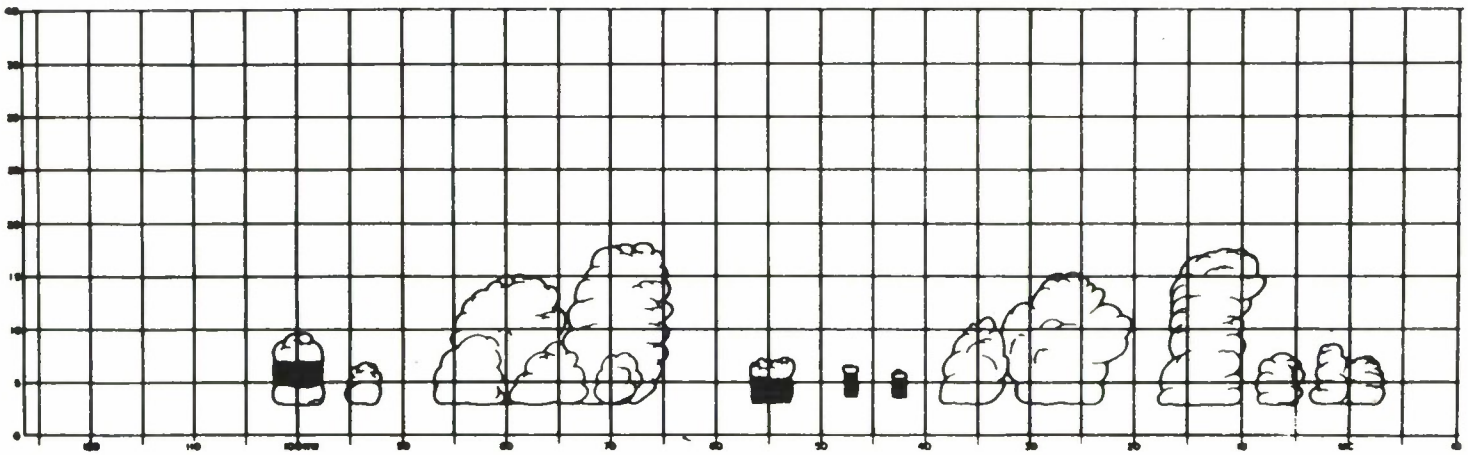

Figure 3. Cloud Cross Sections for August 8, 1963, Valkaria, Florida

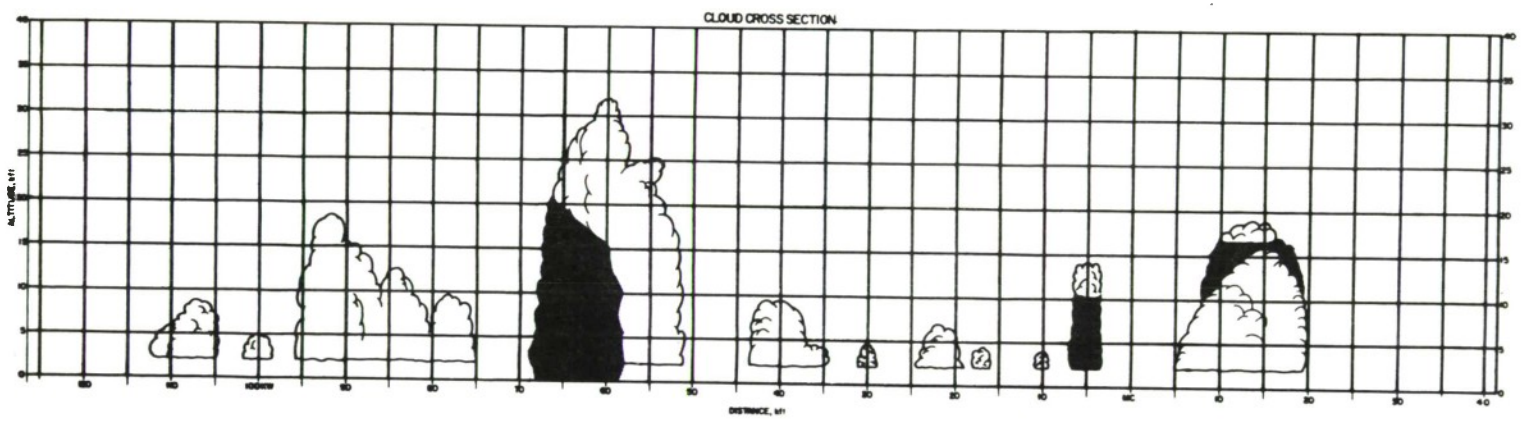

Figure 4. Cloud Cross Section for August 9, 1963, Valkaria, Florida

The complex index of refraction consists of dispersive (real) and attenuative (imaginary) components, as shown in Equation (2).

$$\text{Refractive Index} = \text{dispersive} \pm j\ \text{attenuative} \tag{2}$$

or

$$n = m \pm jk$$

It is evident from the sample values listed in Table I that the characteristics are a function of both temperature and wavelength.

The variation of the real part of the dielectric function, as a function of temperature and frequency, is illustrated graphically in Appendix I, Figure 18. The two frequencies of particular interest for the LIR application are 15.6 gHz (1.8 cm) and 31.2 gHz (0.9 cm). The dispersive effects of cloud droplets on LIR measurements can be estimated from the difference between the real parts of the refractive index at the two frequencies.

$$\text{Dispersion} = 1.5 \times 10^{-6} \left\{ \left\{\frac{M}{P}\right\} \left. \text{Re}\left[\frac{(\bar{n}_d^{\,2} - 1)}{(\bar{n}_d^{\,2} + 2)}\right] \right|_{15.6\ \text{gHz}} - \left. \text{Re}\left[\frac{(\bar{n}_d^{\,2} - 1)}{(\bar{n}_d^{\,2} + 2)}\right] \right|_{31.2\ \text{gHz}} \right\} \tag{3}$$

where $n_d = m - i\,k$.

The term

$$\text{Re}\ \frac{(\bar{n}_d^{\,2} - 1)}{(\bar{n}_d^{\,2} + 2)}$$

can be expressed in terms of the real and imaginary value of the refractive index of water,

TABLE I.

Values of the Characteristics of Water and Ice Crystals Found in the Literature [2,3,4]

Temp. (^{o}C)	λ(cm)	m	k
Water			
-8	.62	3.10	1.77
-8	1.24	4.15	2.55
-8	3.21	8.14	2.00
0	.62	3.45	2.04
		3.49	1.92
0	1.24	4.75	2.77
0	3.21	7.80	2.44
10	.62	3.94	2.37
10	.62	4.08	2.34
10	1.24	5.45	2.90
20	.62	4.44	2.59
20	1.24	6.15	2.86
18	. 9	5.55	2.85
18	1.25	6.41	2.86
Ice crystals			
0		1.78	0.002

$$\mathrm{Re}\left[\frac{(\bar{n}_d^2 - 1)}{(\bar{n}_d^2 + 2)}\right] = \frac{(m^2 - k^2 - 1)(m^2 - k^2 + 2) + 4m^2K^2}{(m^2 - k^2 + 2)^2 + 4m^2K^2} . \qquad (4)$$

The variation of dispersion with temperature curve in Figure 5 is based on the curve in Appendix I, Figure 20; it is shown as a dashed line, whereas the straight line approximation of the function used in the computation for this report is shown as a solid line. There was insufficient data available concerning the temperature regions outside the 0- to 10-degree C range. It was assumed that the curve in the low-temperature region had the same equation as the linear approximation of the function in the 0- to 10-degree C range and that it has a constant value of 0.01 in the temperature region above 10 degrees C.

$$N(t) = 0.0310 - (0.0021 \times \Delta'Tn), \quad t < 0^{\circ}C, \qquad (5)$$

where

$$\Delta Tn = {}^{\circ}C \text{ from } 0^{\circ}C,$$

$$N(t) = 0.01 \qquad t > 10^{\circ}C. \qquad (6)$$

The effective cloud signal at elevation angle α is defined as D_α.

$$D_\alpha = \sum_{n=1}^{K} N(t)_n \times (MLC)_n \times \Delta\ell_n \times 360 \times 10^{-8}, \qquad (7)$$

where

$N(t)_n$ = dispersion at the measured temperature according to the graph in Figure 5 and the temperature as determined from the Rawinsonde data given in Appendix II,

$(MLC)_n$ = average measured liquid content (gm/m^3) for the section of path between the 500-foot grid lines,

$\Delta\ell_n$ = distance between grid line n and grid line $(n + 1)$,

K = uppermost layer containing liquid water as determined by the ETR measurements.

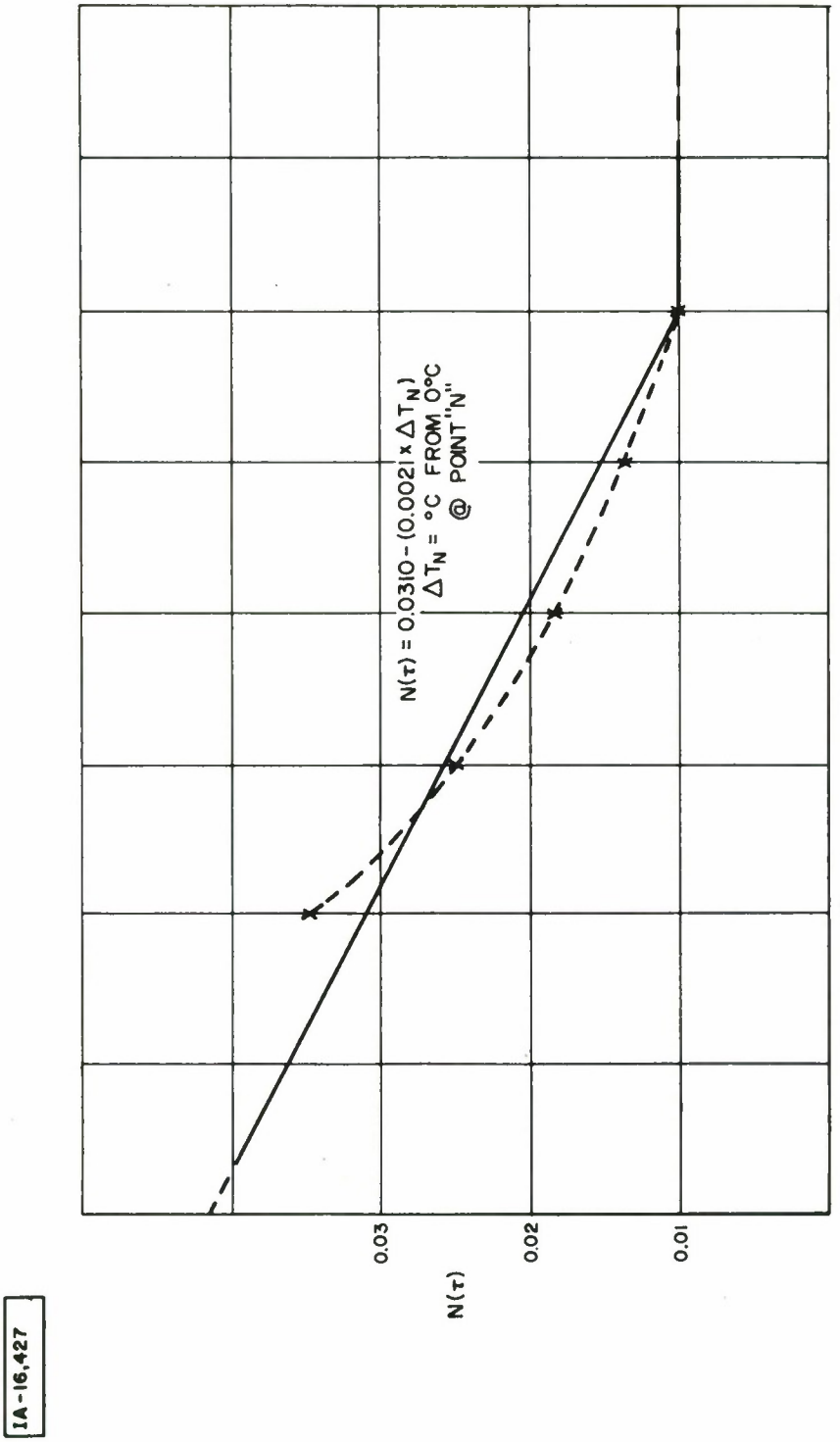

Figure 5. Dispersion vs. Temperature

Measurement data on the amount and distribution of liquid water in a cross section of the atmosphere along the 20-mile east-west baseline of the MISTRAM system at Valkaria, Florida, and extending to about 28,000 feet altitude was available for the dates of August 7, 8, and 9, 1963, from measurements made by Dr. R. L. Cunningham (AFCRL); a detailed description of the measurement program is given in References 5 and 6.

The temperature vs. altitude profile was obtained from Rawinsonde measurements up to 20,000 feet made at the MISTRAM Central (MC) site. These are tabulated in Appendix II together with the liquid-water measurement data. Temperature data above 20,000 feet was obtained from Reference 3, and the basic data is tabulated in Appendix II. The vertical temperature-pressure profile at every point along the cross section was assumed identical to that measured at the MC location.

The lower elevation angle is limited to a minimum of 5.5 degrees by the data available. This can be seen by sketching a ray at a 5.5 = degree elevation angle starting at the MISTRAM West (MW) site (Figure 6); this ray reaches an altitude of 10,000 at MC. There is insufficient data east of the MC point for making valid calculations at lower elevation angles.

The magnitude and characteristic of the dispersive effect on measurements made by the LIR are for the environmental conditions measured at the ETR for the 3 specific days. No attempt was made to determine the applicability of results to other days during the year. The calculated values may be high in the case of a few cloud formations, because of low temperatures at high altitudes, but it is believed that any error resulting from the assumptions, made when valid data were not available, will provide an upper bound on the magnitude of the effect. The results tend to show that the presence of some clouds does not negate the application of this advanced technique for metric-range tropospheric corrections.

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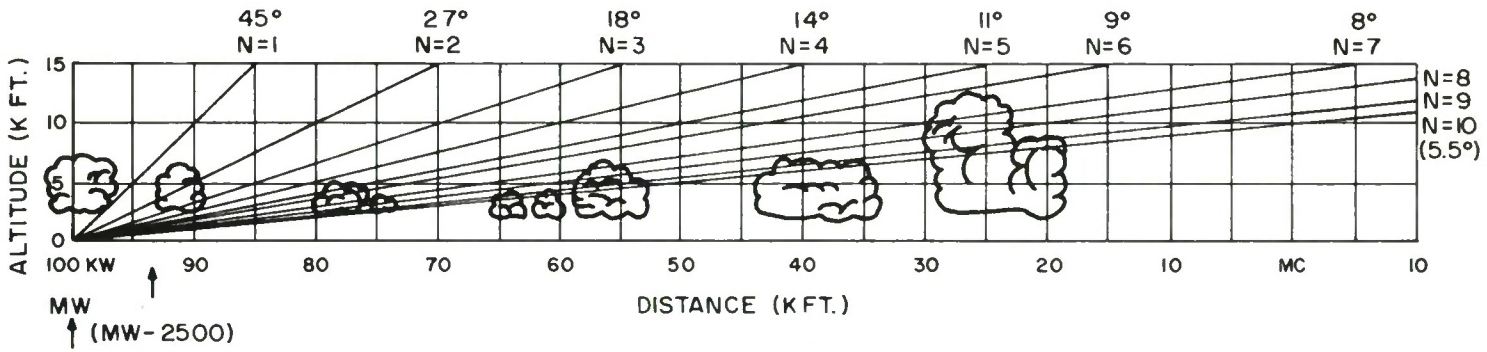

Figure 6. Paths of Rays at Various Elevation Angles, Cloud Cross Section for August 7, 1963

SECTION III

COMPUTER PROGRAMS

The computation problem was divided into two phases because of limitations on the available amount of computer memory storage. The first phase (LIR) determines the dispersivity at each grid intersection point in the cross section and the total dispersivity for vertical rays at points 500 feet apart along the baseline. The flow diagram for LIR is shown in Figure 7. The dispersivity distribution for vertical rays for the 3 test days has been plotted as a function of location along the MISTRAM baseline in Figures 8, 9, 10 and 11. The program is presented in Appendix III, and tabulated results are presented in Tables II, III, IV, and V. The total dispersivity for rays at elevation angles of 45, 26.6, 18.4, 14.05, 11.3, 9.45, 8.15, 7.1, 6.3, 5.5, 4.8, 4.2, 4.1, and 3.8 degrees is calculated in the second phase, using the point dispersivity values calculated in the LIR program. This second phase is designated PHS, signifying phase shifts, to avoid confusion with the LIR phase. The PHS program flow diagram is shown in Figure 12. In addition, provisions were made to determine the total dispersivity along a ray at a given angle for any starting point along the baseline. Movement of the starting point of the ray along the baseline is referred to as slip and is in steps of 500 feet. The dispersivity for constant elevation angles of 18.6, 14.0, and 8.1 degrees is plotted in Figures 13 and 14 for August 7 and 8, respectively. The dashed portion of the curve is included to give some additional indication of the behavior of the curves, but the basic data is not adequate to insure that this is the total dispersivity; the true value may be higher than the value shown. The PHS program listing is included in Appendix I, and tabulated values of the dispersivity as a function of elevation angle for 10 locations along the baseline are included in Appendix II.

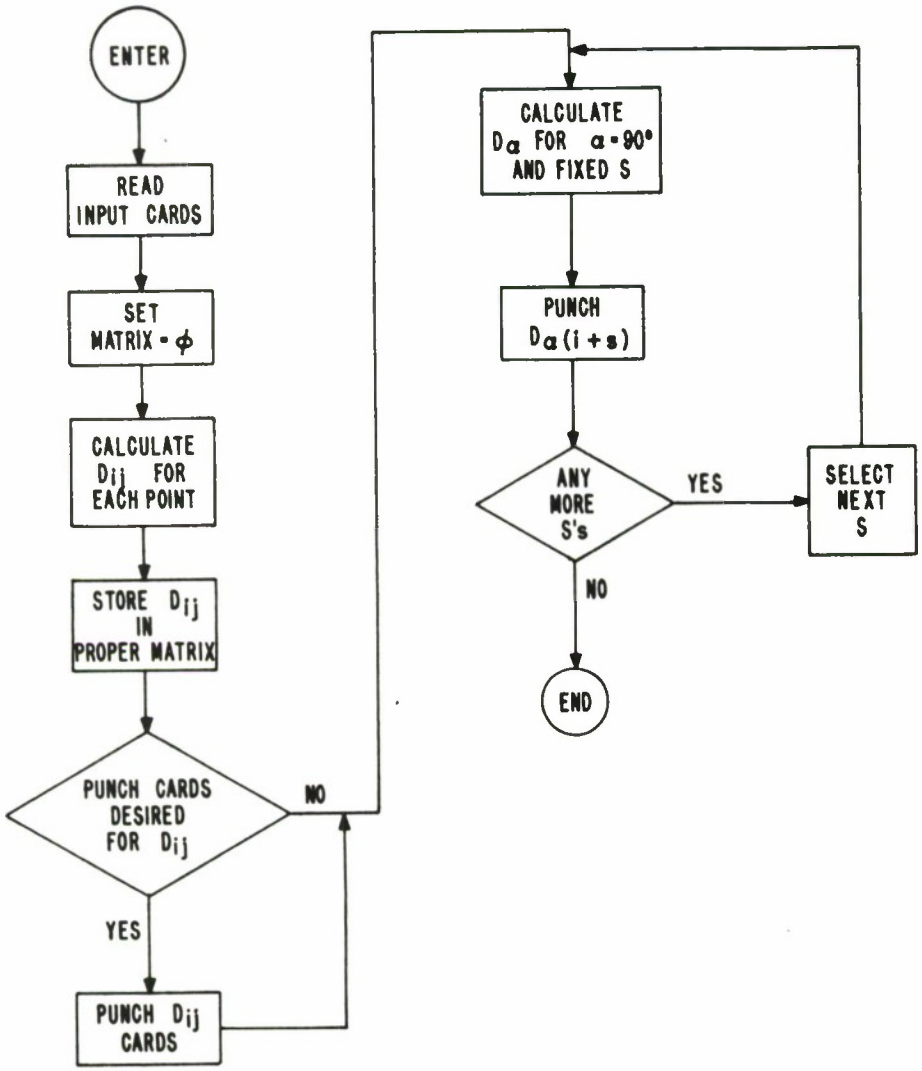

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Figure 7. LIR Program Flow Diagram

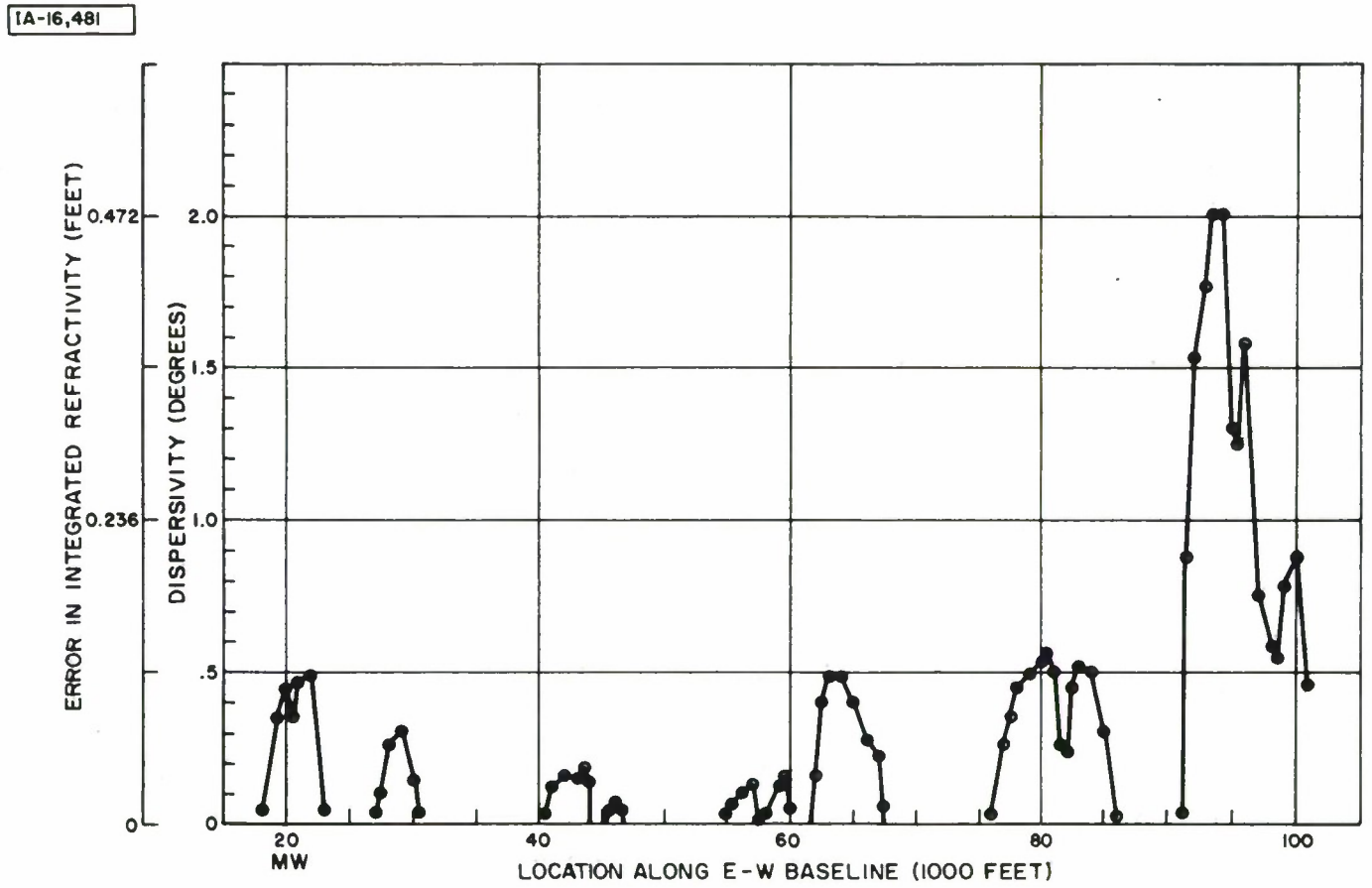

Figure 8. Dispersivity Distribution, Vertical Rays, August 7, 1963

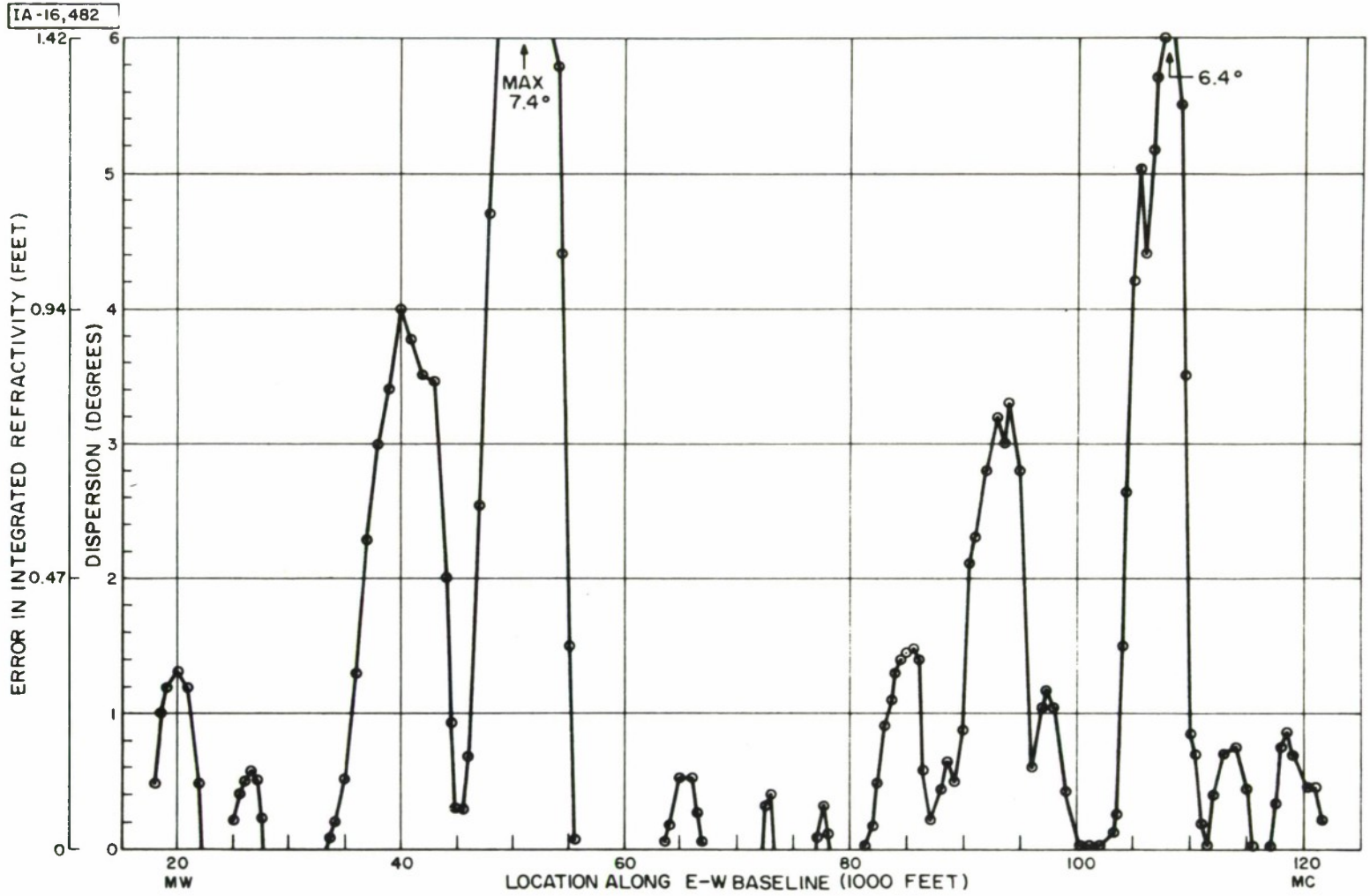

Figure 9. Dispersivity Distribution, Vertical Rays, August 8, 1963

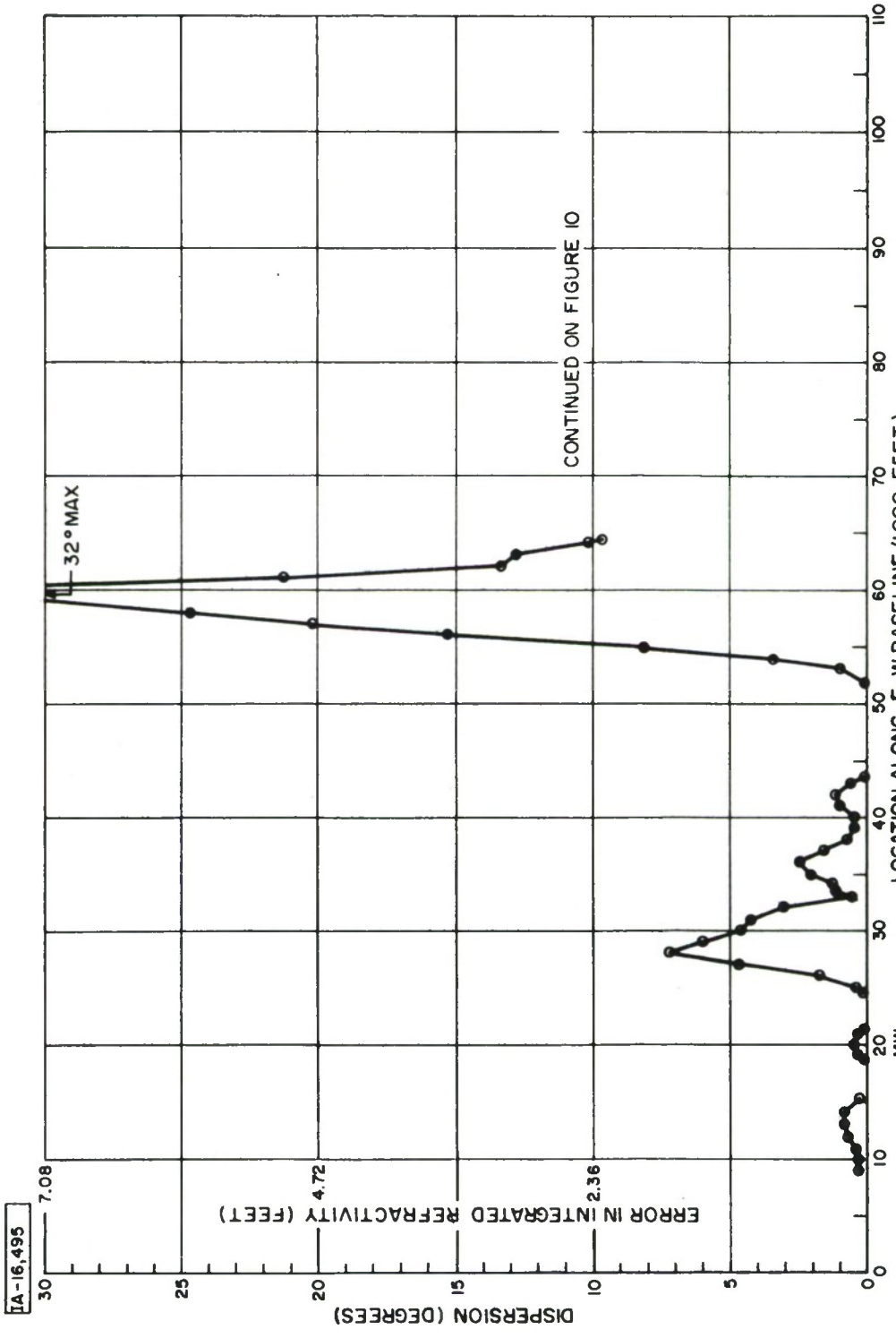

Figure 10. Dispersivity Distribution, Vertical Rays, August 9, 1963

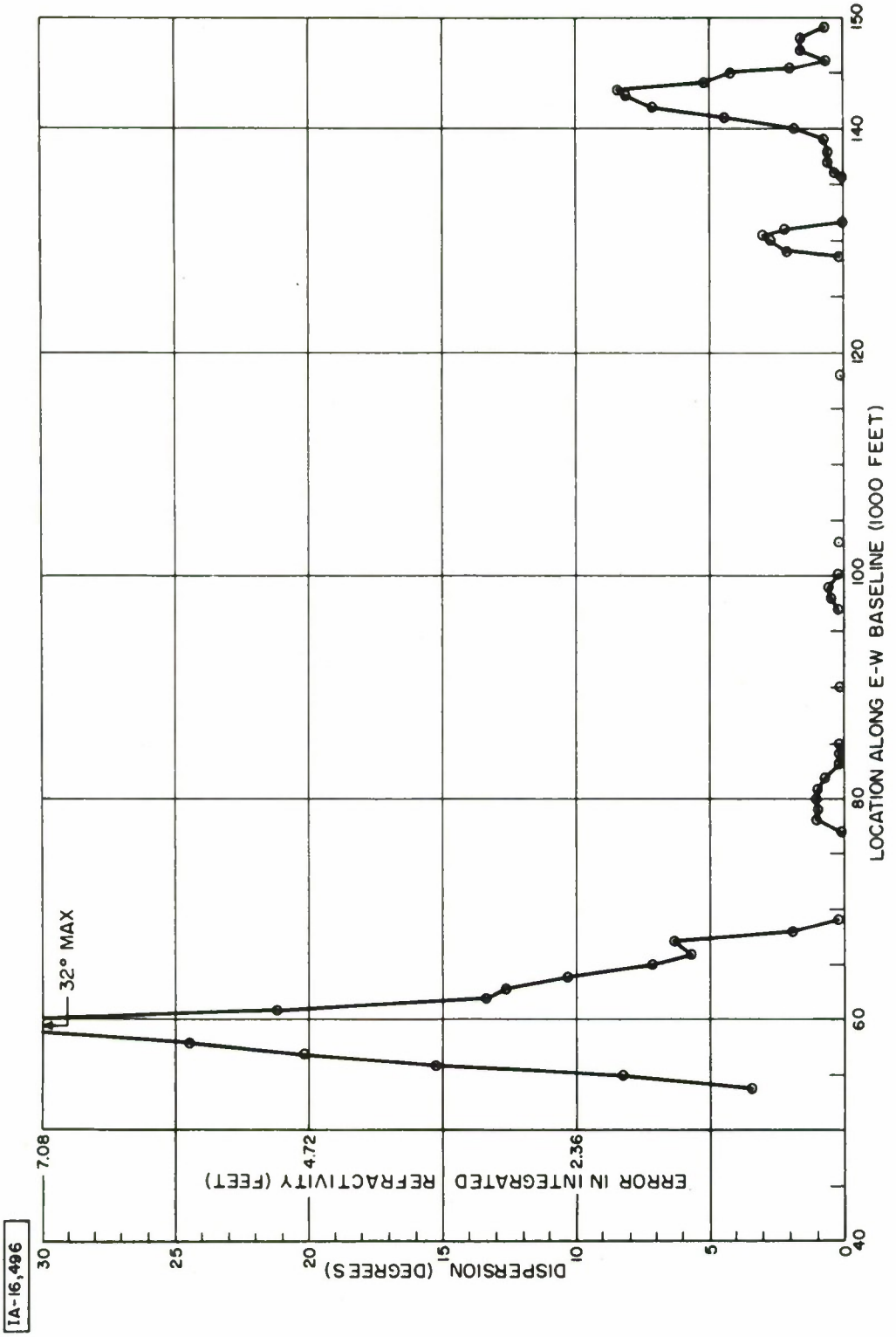

Figure 11. Dispersivity Distribution, Vertical Rays, August 9, 1963

TABLE II

Dispersivity for Vertical Rays for Positions Along the MISTRAM E-W Baseline, August 7, 1963.

Location	Degrees	Location	Degrees	Location	Degrees
18.0	0.05	62.0	0.17	94.5	1.67
18.5	0.23	62.5	0.40	95.0	1.30
19.0	0.36	63.0	0.48	95.5	1.25
19.5	0.44	63.5	0.48	96.0	1.57
20.0	0.44	64.0	0.48	96.5	1.44
20.5	0.36	64.5	0.46	97.0	0.75
21.0	0.47	65.0	0.40	97.5	0.56
21.5	0.48	65.5	0.35	98.0	0.58
22.0	0.49	66.0	0.26	98.5	0.56
22.5	0.32	66.5	0.26	99.0	0.78
23.0	0.05	67.0	0.23	99.5	0.78
27.0	0.01	67.5	0.06	100.0	0.87
27.5	0.09	76.0	0.01	100.5	0.70
28.0	0.25	76.5	0.01	101.0	0.45
28.5	0.29	77.0	0.26		
29.0	0.30	77.5	0.35		
29.5	0.30	78.0	0.44		
30.0	0.13	78.5	0.47		
30.5	0.01	79.0	0.49		
40.5	0.01	79.5	0.51		
41.0	0.12	80.0	0.52		
41.5	0.17	80.5	0.54		
42.0	0.16	81.0	0.50		
42.5	0.15	81.5	0.25		
43.0	0.14	82.0	0.24		
43.5	0.18	82.5	0.46		
44.0	0.13	83.0	0.51		
45.5	0.02	83.5	0.50		
46.0	0.06	84.0	0.50		
46.5	0.03	84.5	0.49		
55.0	0.01	85.0	0.30		
55.5	0.06	85.5	0.16		
56.0	0.10	86.0	0.01		
56.5	0.13	91.0	0.22		
57.0	0.12	91.5	0.97		
57.5	0.00	92.0	1.55		
58.5	0.01	92.5	1.66		
59.0	0.12	93.0	1.78		
59.5	0.13	93.5	2.03		
60.0	0.06	94.0	2.01		

TABLE III

Dispersivity for Vertical Rays for Positions Along the MISTRAM E-W Baseline, August 8, 1963.

Location	Degrees	Location	Degrees	Location	Degrees	Location	Degrees
18.0	0.52	45.5	0.28	84.0	1.28	105.0	4.22
18.5	1.00	46.0	0.66	84.5	1.36	105.5	5.02
19.0	1.18	46.5	1.38	85.0	1.46	106.0	4.48
19.5	1.30	47.0	2.58	85.5	1.58	106.5	5.18
20.0	1.26	47.5	3.78	86.0	1.38	107.0	5.69
20.5	1.32	48.0	4.71	86.5	0.57	107.5	6.03
21.0	1.21	48.5	5.79	87.0	0.24	108.0	6.36
21.5	0.95	49.0	6.63	87.5	0.23	108.5	6.18
22.0	0.53	49.5	6.89	88.0	0.43	109.0	5.48
25.0	0.18	50.0	7.20	88.5	0.66	109.5	3.47
25.0	0.41	50.5	7.23	89.0	0.49	110.0	0.83
26.0	0.52	51.0	7.42	89.5	0.57	110.5	0.65
26.5	0.57	51.5	7.32	90.0	0.90	111.0	0.18
27.0	0.54	52.0	6.74	90.5	2.15	111.5	0.01
27.5	0.24	52.5	6.48	91.0	2.29	112.0	0.39
33.5	0.05	53.0	6.30	91.5	2.37	112.5	0.62
34.0	0.18	53.5	6.45	92.0	2.79	113.0	0.69
34.5	0.32	54.0	5.79	92.5	3.19	113.5	0.73
35.0	0.53	54.5	4.42	93.0	3.21	114.0	0.74
35.5	0.88	55.0	1.52	93.5	3.03	114.5	0.69
36.0	1.31	55.5	0.05	94.0	3.27	115.0	0.41
36.5	1.73	63.5	0.02	94.5	3.24	115.5	0.06
37.0	2.27	64.0	0.15	95.0	2.76	116.5	0.01
37.5	2.69	64.5	0.34	95.5	1.94	117.0	0.04
38.0	3.03	65.0	0.53	88.5	0.03	117.5	0.37
38.5	3.00	65.5	0.56	89.0	0.09	118.0	0.77
39.0	3.43	66.0	0.53	96.0	0.62	118.5	0.85
39.5	3.78	66.5	0.24	96.5	0.96	119.0	0.69
40.0	4.02	67.0	0.08	97.0	1.07	119.5	0.40
40.5	3.94	72.5	0.29	97.5	1.18	120.0	0.43
41.0	3.77	73.0	0.41	98.0	1.09	120.5	0.37
41.5	2.93	77.0	0.12	98.5	0.72	121.0	0.38
42.0	2.47	77.5	0.34	99.0	0.42	121.5	0.21
42.5	3.53	78.0	0.10	99.5	0.08	122.0	0.40
43.0	3.46	81.5	0.00	102.5	0.00	122.5	0.28
43.5	3.02	82.0	0.18	103.0	0.09		
44.0	2.04	82.5	0.51	103.5	0.24		
44.5	0.96	83.0	0.92	104.0	1.52		
45.0	0.32	83.5	1.12	104.5	2.66		

TABLE IV

Dispersivity for Vertical Rays for Positions Along the MISTRAM E-W Baseline, August 9, 1963.

Location	Degrees	Location	Degrees	Location	Degrees	Location	Degrees
52.5	0.36	78.5	1.13	20.5	0.20	43.0	0.52
53.0	1.06	79.0	1.06	21.0	0.16	43.5	0.05
53.5	2.34	79.5	0.96	21.5	0.02	52.0	0.09
54.0	3.51	80.0	1.04	24.5	0.06	97.5	0.28
54.5	6.33	80.5	1.04	25.0	0.40	98.0	0.56
55.0	8.29	81.0	0.98	25.5	1.02	98.5	0.54
55.5	11.57	81.5	0.90	26.0	1.88	99.0	0.51
56.0	15.20	82.0	0.79	26.5	3.13	99.5	0.49
56.5	18.65	82.5	0.45	27.0	4.77	100.0	0.18
57.0	20.43	83.0	0.22	27.5	6.82	100.5	0.05
57.5	22.77	83.5	0.17	28.0	7.44	103.0	0.14
58.0	24.58	84.0	0.16	28.5	7.29	102.5	0.10
58.5	26.66	84.5	0.15	29.0	6.06	103.0	0.03
59.0	30.40	85.0	0.07	29.5	5.28	103.5	0.14
59.5	32.47	89.5	0.08	30.0	4.77	104.0	0.09
60.0	32.54	90.0	0.22	30.5	4.56	118.0	0.01
60.5	30.89	90.5	0.16	31.0	4.38	118.5	0.12
61.0	21.62	91.0	0.01	31.5	3.42	119.0	0.10
61.5	14.98	96.0	0.01	32.0	3.07	128.0	0.26
62.0	13.28	96.5	0.09	32.5	2.22	129.0	2.19
62.5	11.63	97.0	0.13	33.0	1.41	129.5	2.97
63.0	12.82	97.0	0.18	33.5	1.26	130.0	2.78
63.5	10.88	8.5	0.11	34.0	1.33	130.5	3.05
64.0	10.15	9.0	0.22	34.5	1.51	131.0	2.25
64.5	11.50	9.5	0.26	35.0	2.17	131.5	0.07
65.0	7.22	10.0	0.29	35.5	2.55	135.5	0.03
65.5	3.68	10.5	0.30	36.0	2.56	136.0	0.13
66.0	1.35	11.0	0.33	36.5	2.24	136.5	0.21
65.5	4.43	11.5	0.56	37.0	1.76	137.0	0.39
66.0	5.60	12.0	0.80	37.5	1.31	137.5	0.49
66.5	6.50	12.5	0.89	38.0	0.83	138.0	0.49
67.0	6.44	13.0	0.94	38.5	0.65	138.5	0.61
67.0	0.11	13.5	0.90	39.0	0.28	139.0	0.72
67.5	2.94	14.0	0.90	39.5	0.18	139.5	1.20
68.0	1.86	14.5	0.76	40.0	0.34	140.0	1.97
68.5	0.15	15.0	0.18	40.5	0.84	140.5	2.51
69.0	0.00	18.5	0.04	41.0	1.01	141.0	4.53
77.0	0.29	19.0	0.13	41.5	1.11	141.5	6.11
77.5	0.69	19.5	0.22	42.0	1.13	142.0	7.15
78.0	1.00	20.0	0.24	42.5	1.06	142.5	7.85

TABLE IV (Cont'd.)

Location	Degrees
143.0	8.26
143.5	8.59
144.0	5.20
144.5	4.29
145.0	4.20
145.5	1.94
146.0	0.66
146.5	0.32
147.0	1.79
147.5	1.75
148.0	1.72
148.5	1.28
149.0	0.74

Table V

Dispersivity for Rays at Given Elevation Angles
for 10 Positions Along the MISTRAM E-W Baseline

DISPERSIVITY AS A FUNCTION OF ELEVATION ANGLE AND LOCATION ALONG BASELINE
AUGUST 7,1963

VALUE OF DISPERSIVITY GIVEN IN DEGREES RELATIVE PHASE SHIFT REF. TO 31.2GHZ

ANGLE	POSITION ALONG THE BASELINE IN 500 FEET INCREMENTS FROM MW									
DEGREES	2	3	4	5	6	7	8	9	10	11
3.8	2.596	2.596	2.596	2.596	2.596	2.596	2.596	2.596	2.596	2.596
4.1	2.861	2.818	2.775	2.735	2.694	2.653	2.612	2.572	2.530	2.487
4.2	3.234	3.187	3.137	3.085	3.034	2.982	2.930	2.880	2.833	2.791
4.8	3.582	3.540	3.500	3.457	3.416	3.376	3.336	3.295	3.241	3.187
5.2	3.768	3.753	3.736	3.721	3.702	3.679	3.651	3.619	3.580	3.537
5.5	3.553	3.594	3.627	3.657	3.684	3.704	3.726	3.743	3.745	3.738
6.3	2.432	2.504	2.578	2.667	2.759	2.849	2.941	3.023	3.101	3.172
7.1	2.385	2.350	2.311	2.275	2.250	2.239	2.228	2.216	2.207	2.219
8.2	2.321	2.393	2.434	2.469	2.502	2.507	2.496	2.478	2.439	2.394
9.5	0.366	0.400	0.431	0.462	0.496	0.539	0.594	0.670	0.771	0.878
11.3	0.026	0.044	0.075	0.117	0.170	0.231	0.286	0.329	0.360	0.382
14.1	0.010	0.003	0.000	0.000	0.000	0.000	0.004	0.009	0.013	0.024
18.4	0.124	0.096	0.070	0.048	0.030	0.014	0.004	0.000	0.000	0.000
26.6	0.310	0.307	0.294	0.281	0.259	0.214	0.157	0.105	0.067	0.042

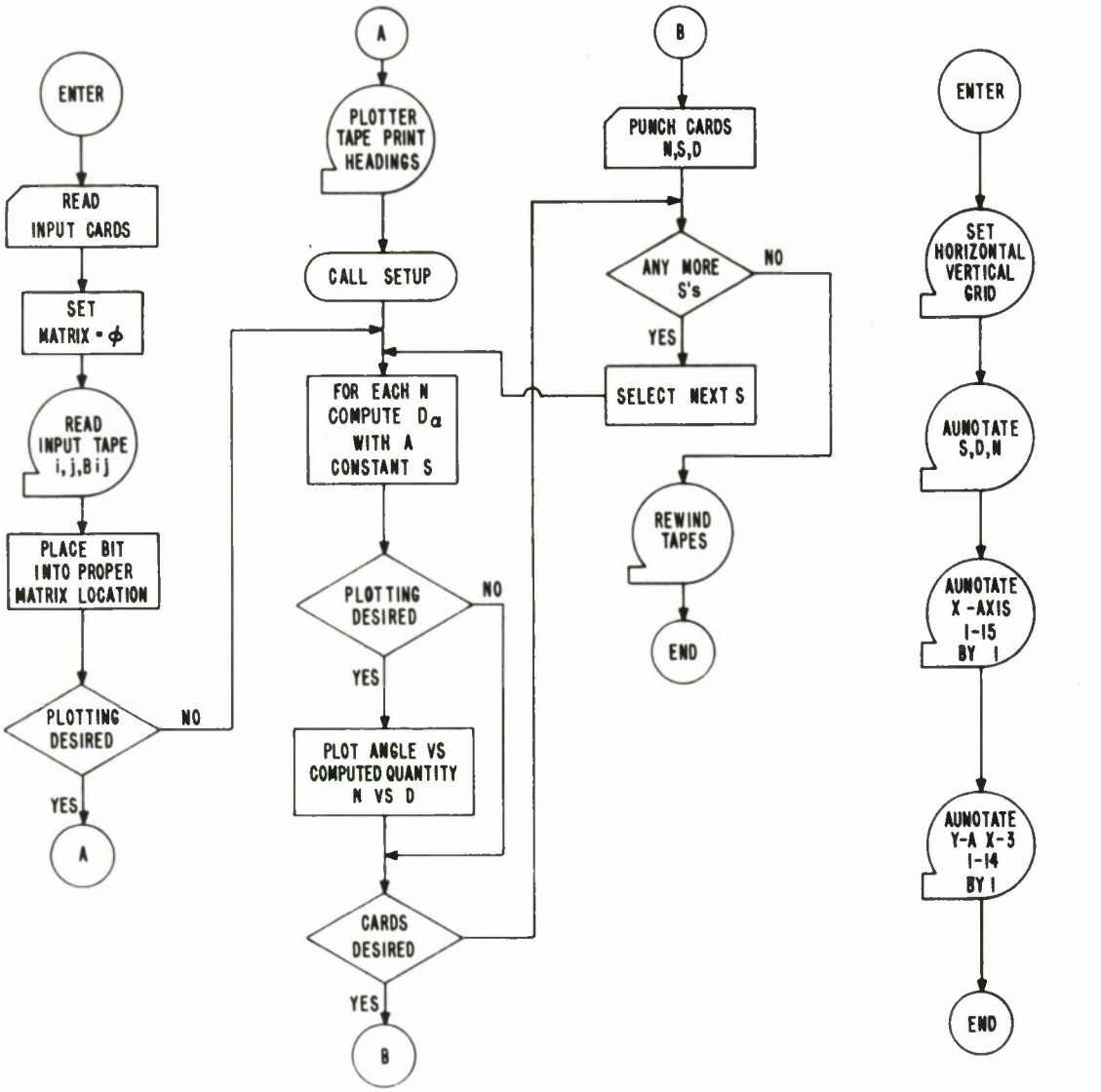

Figure 12. PHS Program Flow Diagrams

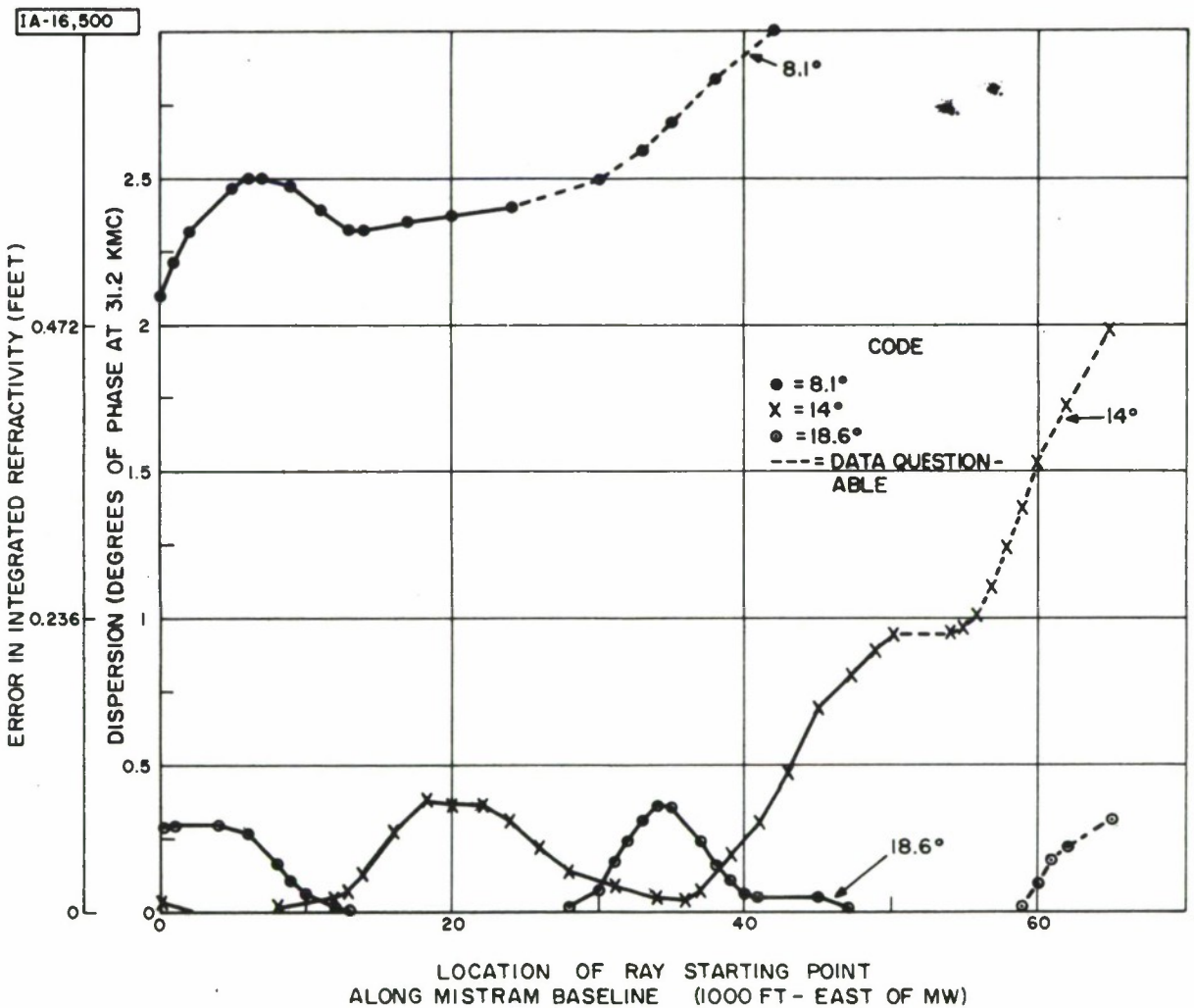

Figure 13. Dispersion vs. Ray Starting Location, August 7, 1963, Constant Elevation Angle

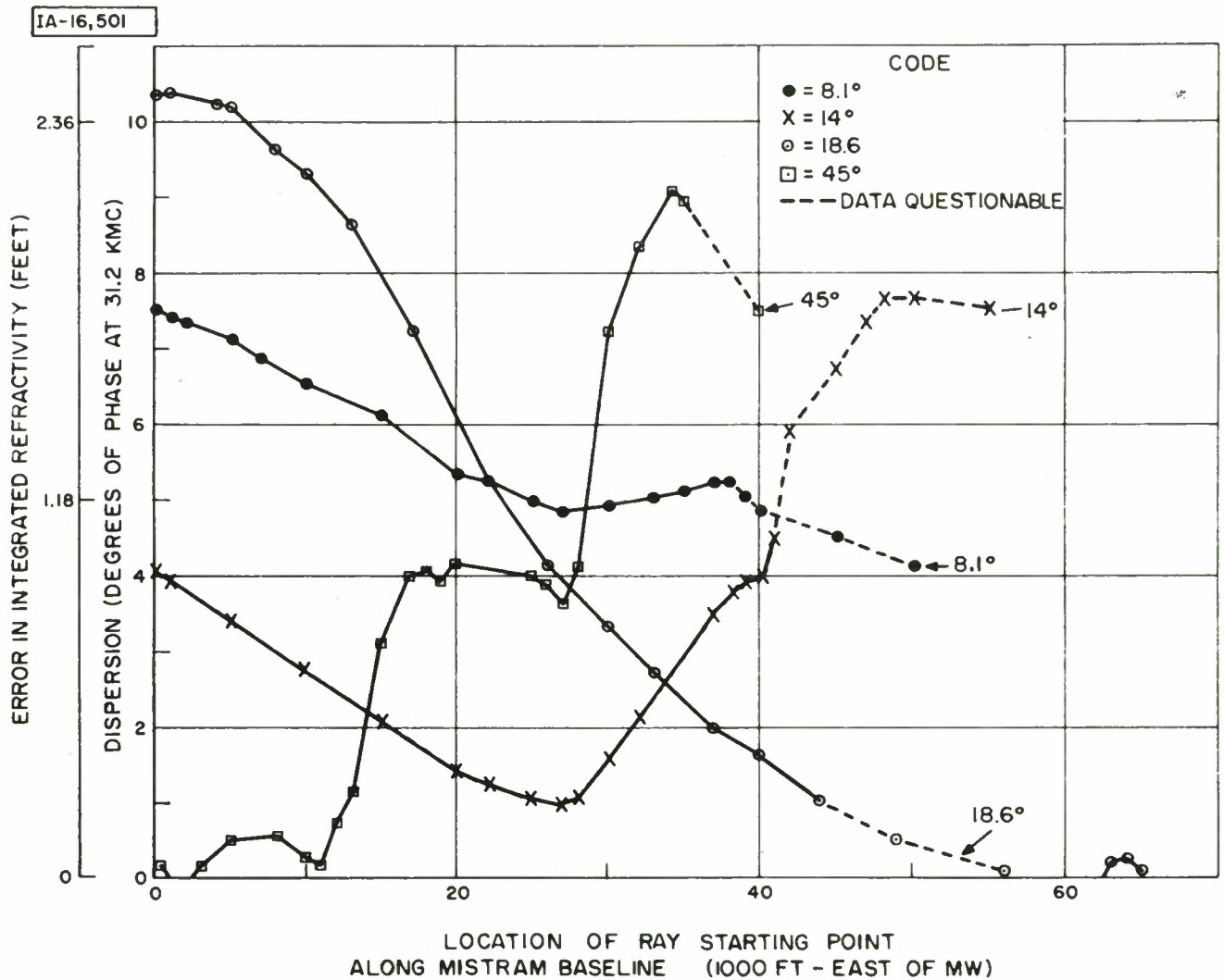

Figure 14. Dispersion vs. Ray Starting Location, August 8, 1963, Constant Elevation Angle

SECTION IV

DISCUSSION OF RESULTS

Variation of the dispersivity for vertical rays as a function of position along the baseline for August 7, 8, and 9, is given by the dispersivity distribution curves in Figures 8, 9, 10, and 11. The magnitude of the effect for the vertical rays varies between zero and a maximum of about 32 degrees relative phase shift, or 7.55 feet error in integrated refractivity. No noticeable common pattern was discernible in the distributions covering the 3 days that indicate minimums occur at specific locations. Cloud height has a very important influence on the magnitude of the dispersive effect since the temperature decreases with increasing height. The decrease in temperature, coupled with the strong temperature sensitivity indicated by the dispersivity-temperature relationship given in Figure 5, results in relatively high values of dispersivity. For example, the temperature was -25.8 degrees at 27,000 feet altitude on August 9, according to the Rawinsonde data. However, it was assumed that the water was at air temperature since no information is available on the actual temperature of the measured liquid water at this altitude, nor on the percentage of water in the form of ice crystals or snow. Since nonresonant absorption of the snow and ice crystals occurs in the kilohertz and low megahertz range, the particles are not expected to be dispersive at 15.6 and 31.2 gHz. On the other hand, liquid-coated particles would have an effect similar to the effect of a corresponding water droplet.

In addition, little experimental data is available on the characteristics of water at the supercooled temperature. The lowest temperature at which the water characteristics are available was at $-8^{o}C$ (Reference 3, pages 13 to 17). Hence, great caution should be exercised in using the maximum values that occurred in the high clouds. The

calculated values can be considered as upper bounds; if one-half the measured liquid was in the form of dry H_2O ice crystals, then the magnitude of the effect should be decreased by 50 percent.

Variation of the dispersivity as a function of elevation angle is shown in the graphs, Figures 15 and 16, for August 7 and 8, respectively. It is evident that the dispersivity is erratic and varies from day to day and with location along the baseline.

The characteristic common to plots of this data type is elevation angles at which the dispersive effect has very low values, the magnitude generally increasing with decreasing elevation angles. For example, the error in the integrated refractivity graph at both the 11.3- and 14.0-degree elevation angle points on August 8, 1963 (Figure 16) was about 0.9 foot, after reaching a maximum of 2.4 feet at 25.6 degrees. While no calculations were performed in this investigation to determine the magnitude of attenuation of water droplets in clouds, it is obvious from physical considerations that amplitude of the signals would decrease in regions where magnitude of the differential phase increases. Hence, the possibility exists of monitoring amplitude of the signals to obtain some indication of when the minimum error in integrated refractivity occurs. The fact that the dispersivity tends to be larger at the lower elevation angles is expected because the probability of encountering clouds increases with decreasing elevation angle. The graphs of dispersion-vs.-ray starting point, in Figures 13 and 14, on the average also tend to show the same effect.

Another limitation in this study was the lack of data covering a sufficiently larger geographical area for various times during one day. The photographs of cloud structure (in Figure XIV and on page 40, Reference 6) indicate that there were few clouds east of MISTRAM CENTRAL. The calculated value of effective cloud signals for rays at

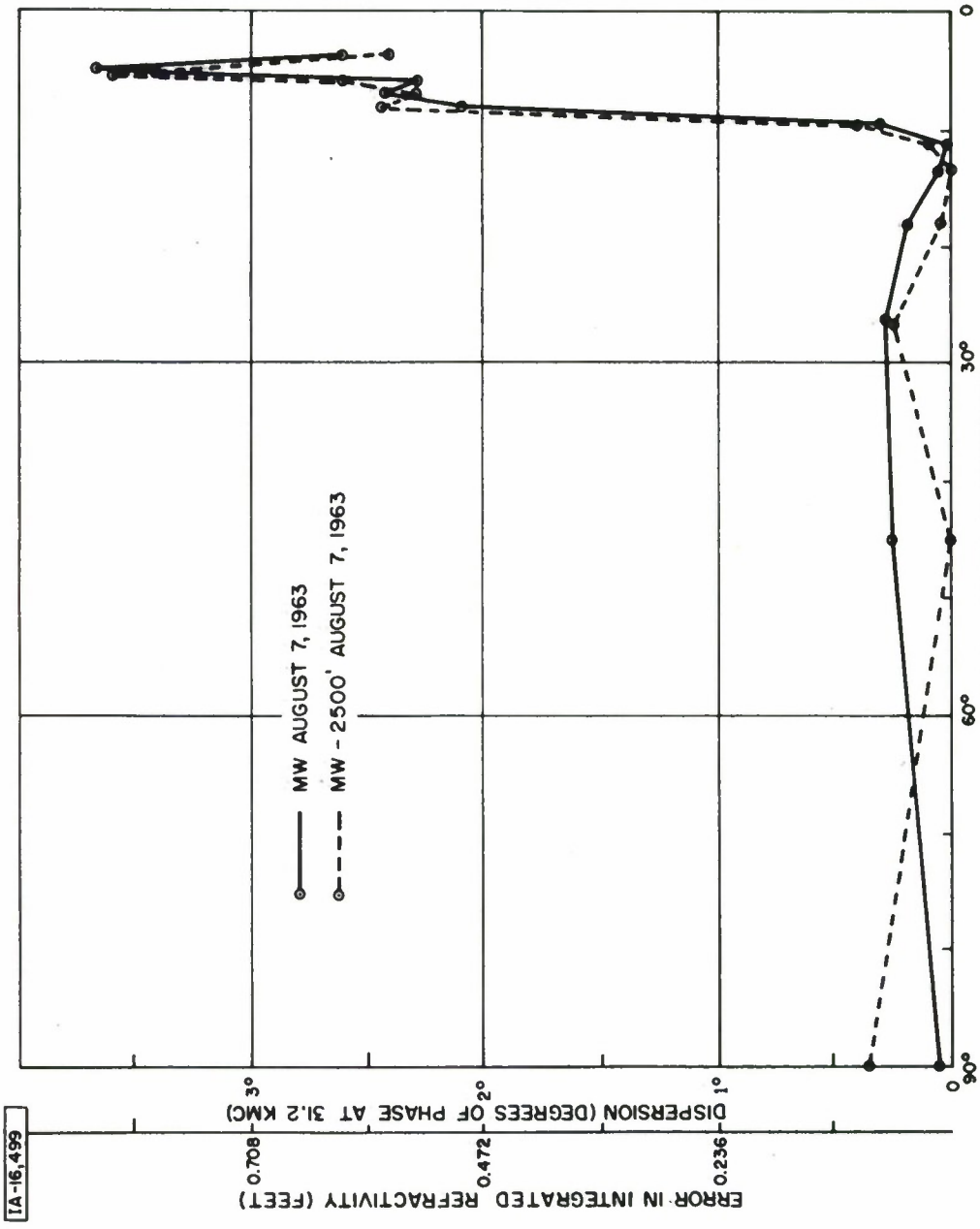

Figure 15. Calculated Effect of Cloud Dispersion Upon LIR

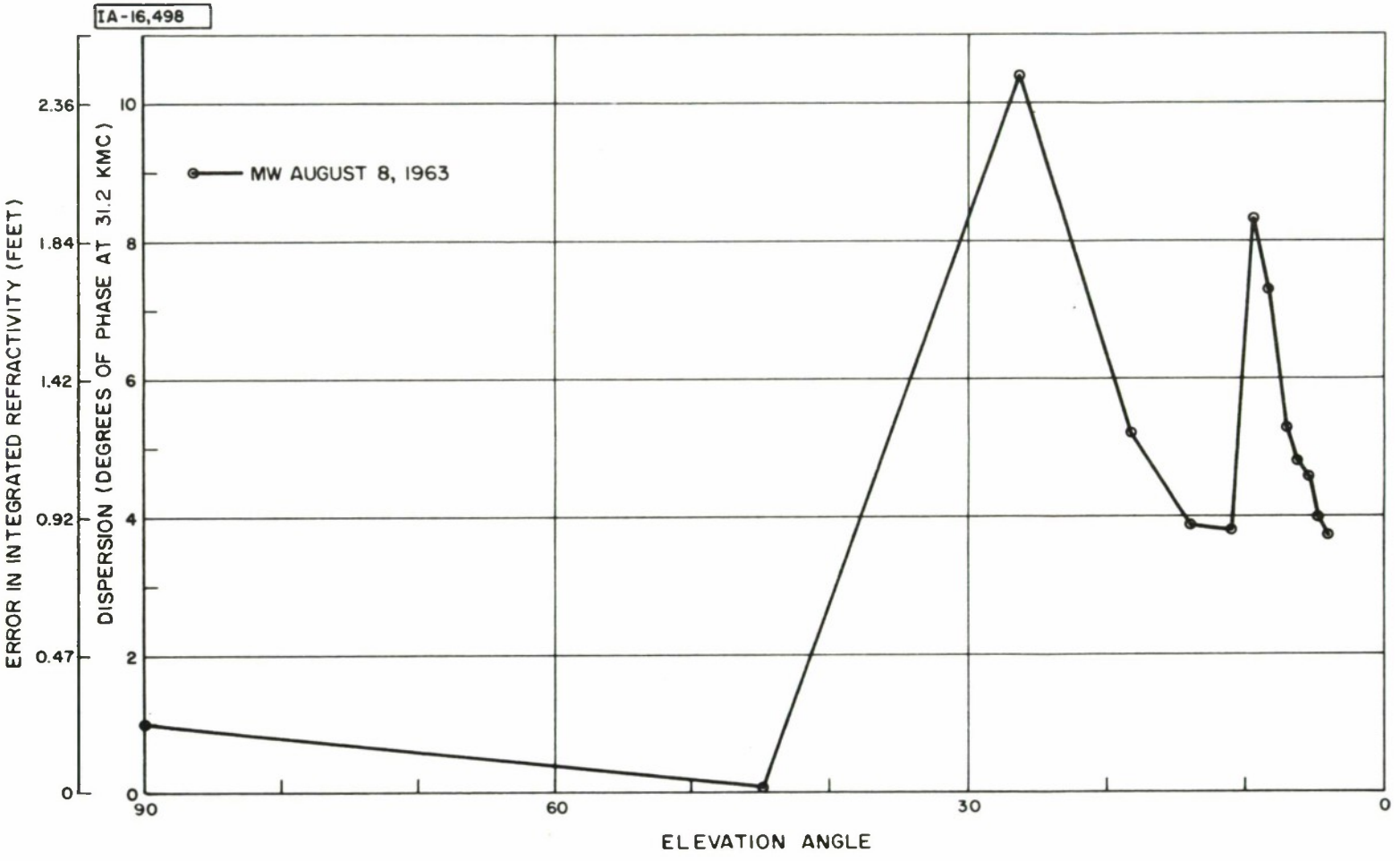

Figure 16. Calculated Effect of Liquid Water Droplets Upon LIR, August 8, 1963, for Ray Starting at MISTRAM West Location

elevation angles of less than 5.5 degrees would be lower than the actual value because the values of measured liquid water would appear as zero for all positions east of the last measurement points. This same effect occurs when the starting point of the rays is moved along the baseline from the MW to MC location, or, in other words, when the slip value increases to large values. This is the reason that the righthand ends of the curves in Figures 13 and 14 are dashed lines. For example, it is evident in the cloud cross section for August 7 (Figure 6) that the ray at 5.5 degrees, that is N = 10, reaches 10,000 feet at the MC location. The calculated value of the effect on any ray at a lower elevation angle would not have the correct value if there were clouds east of MC and below 10,000 feet altitude which were not measured.

The vast amount of data for August 9 resulted in computer storage problems during the PHS program and the results were not included since they could be misleading. The calculated data is in terms of degrees of differential phase shift referred to 31.2 gHz. Each degree of phase shift referred to the 31.2 gHz frequency corresponds to a 0.236-foot error in the distance measured, an error in integrated refractivity.

Numerical values of the dispersivity, as a function of elevation angle and position 500 feet apart of the ray starting point along the baseline, are included in Tables II and III for August 7 and 8. The values for elevation angles 45, 18.6, 14 and 8.1 degrees are plotted in Figures 13 and 14 and show that no consistent pattern in the relative positions of the curves is evident.

SECTION V

CONCLUSIONS

1. The presence of cloud droplets in the measurement path would introduce errors in LIR measurements.

2. The magnitude of error is a function of the elevation angle and type of cloud formation.

3. There are many more so-called holes in the cloud structure at the higher elevation angles than at the lower elevation angles; at the higher angles the error introduced by the could droplets is small compared to the total refraction correction. For example, there is a relative phase shift of 4 degrees, or a refraction error of only 0.9 foot (Figure 16 at 14 degrees) out of a total refraction error of approximately 25 feet for a target at about 14 degrees elevation angle, or at 20-km height and 700-km range (NBS 7254). The residual error is about 2 feet RMS for this condition.

4. Field-test experience indicates that signal amplitude can be used as an indicator of the presence of the cloud-droplet error minimums. Hence, it may be possible to monitor the data and make corrections based on the special data points.

5. Further studies are necessary if it is desired to determine the applicability of this study to other sites.

APPENDIX I

AN ESTIMATE OF THE MAGNITUDE OF MICROWAVE DISPERSION IN CLOUDS AND RAIN*

A normal atmosphere with water vapor as an ingredient will exhibit dispersion in the vicinity of the rotational absorption line of 22,235 mc per sec.[7] This absorption is caused by rotational transitions between molecular states near 1.5×10^7 mc per sec. Liquid and solid water structure prevents this rotation, and the dispersion in these forms will be of different magnitude and quality.

The wavelengths of interest here are 1.8 cm (16.7 kmc per sec) and 0.9 cm (33.4 kmc per sec). These wavelengths are large compared to droplets in fair weather clouds.[8] Droplets generally average 0.0010 -0.0020 cm diameter. Rain drops can be almost as large as the short wavelength but are generally less than 0.5 cm because of the breakup from aerodynamic forces. As shown in Figure 17[8] the most probable diameter for rain drops associated with a fall rate of 0.5 inch per hour is approximately 0.2 cm, while the diameter for a rain rate of 4.0 inches per hour is 0.3 cm.

In order to estimate the index of refraction for mixtures of droplets and drops of water in air, it is necessary to consider the polarizability of the droplets. Classical electrodynamic theory as developed by Mie and others,[9] circa 1908, indicates that for spheres, whose diameter is small compared with a wavelength, the response to electromagnetic fields is equivalent to an electric dipole of moment given by

$$P_o = a^3 \frac{\bar{n}^2 - 1}{\bar{n}^2 + 2}, \qquad (8)$$

* This appendix was originally published as The MITRE Corporation, Bedford, Mass., document W-5234, by H. M. Richardson.

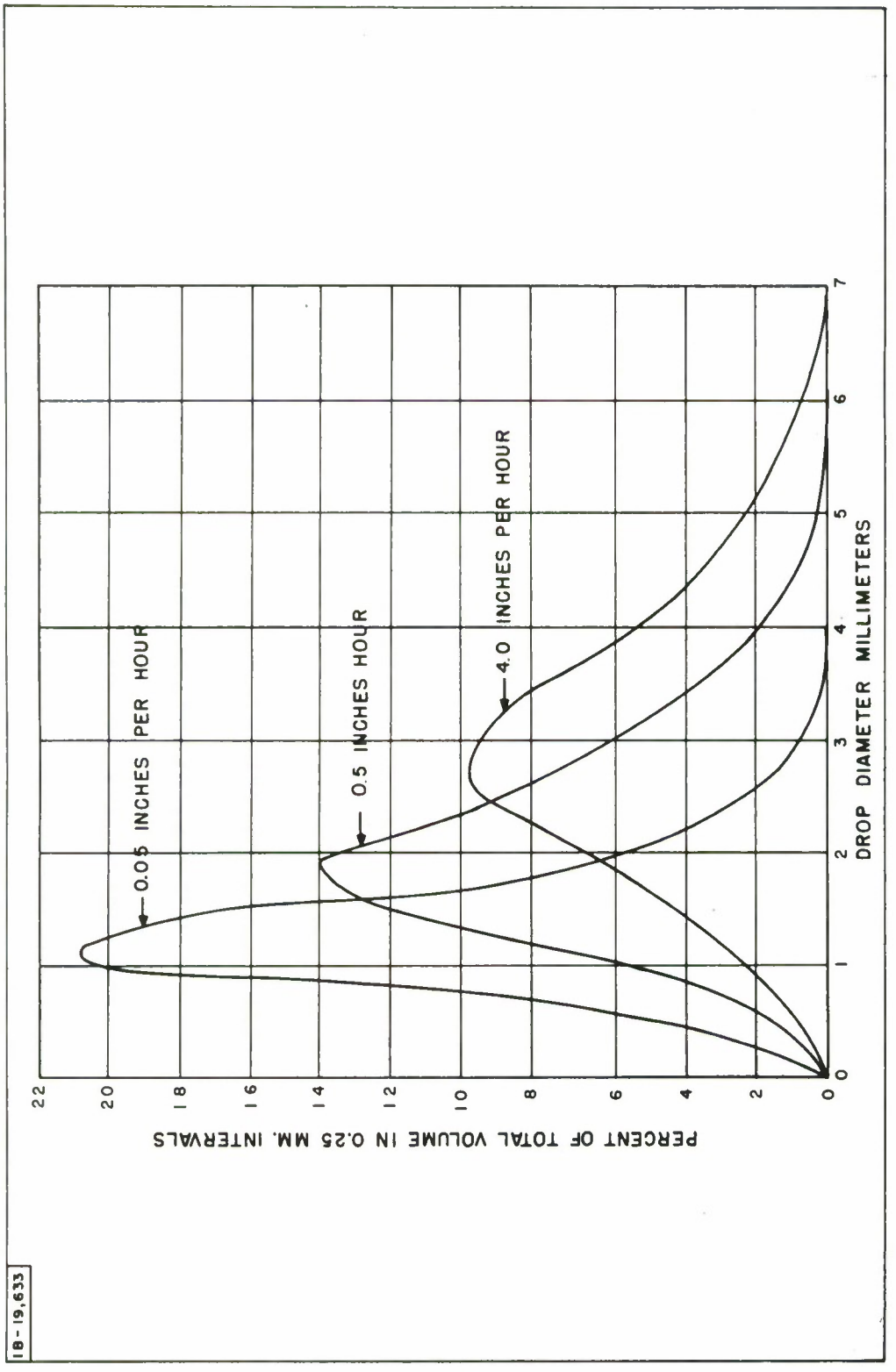

Figure 17. Size Distributions of Raindrops for Different Rain Intensities

where,

a = the radius of the sphere,

n = the complex index of refraction of the material in the droplet, and

n^2 = the complex dielectric constant.

Since dielectric properties of various media are additive, it is assumed that an average dielectric constant for a cloud with N droplets per unit volume can be defined analogously to the definition for an isotropic medium, that is

$$\frac{K_{av} - 1}{4\pi} \vec{E} = \vec{P}_{av}, \tag{9}$$

as compared with

$$\frac{K_i - 1}{4\pi} \vec{E} = \vec{P}_i, \tag{10}$$

where, av denotes average, i denotes isotropic, K is dielectric constant, $\vec{E}$ is electric field, and $\vec{P}$ is polarization (dipole moment per unit volume).

For N droplets per unit volume, the polarization is

$$\vec{P}_a = N \frac{\bar{n}^2 - 1}{\bar{n}^2 + 2} a^3 \vec{E}. \tag{11}$$

From Equations (9) and (11), and considering droplets where n_d^2 is complex dielectric of the droplets

$$K_{av} = 1 + 4\pi a^3 \frac{\bar{n}_d^2 - 1}{\bar{n}_d^2 + 2} N . \tag{12}$$

K_{av} is near 1, hence,

$$\bar{n}_{av} = 1 + 2\pi a^3 \left(\frac{\bar{n}_d^2 - 1}{\bar{n}_d^2 + 2}\right) N . \tag{13}$$

This relationship indicates that the refractivity of a cloud of droplets depends essentially on the percent volume content of water with a correction for the dielectric constant for liquid water.

Equation (13) may be rewritten as

$$n_{\overline{av}} = 1 + \frac{3}{2} \frac{M}{\rho} \frac{\bar{n}_d^2 - 1}{\bar{n}_d^2 + 2} , \qquad (14)$$

where,

M = water density of the dispersion, and

ρ = liquid water density.

For M in micrograms per cm^3 and ρ in grams per cm^3, the second term is in refractivity units, that is, 10 micrograms per cm^3 corresponds to 15 N (refractivity) units for large $\bar{n}_d^2$.

The dielectric properties of water liquid are known to vary near 1 cm vacuum wavelength.[3, 10] The variation of the real part of the dielectric function as derived from References 3 and 10 is illustrated in Figure 18, while Figure 19 shows the variation of the imaginary (or loss) part of the function. Since the wavelength in media with complex dielectric functions depends on the real part (while the attenuation by absorption in the water depends on the imaginary part), the dispersion at the two frequencies of interest is estimated by the difference between the real parts.

$$\text{Dispersion} = 1.5 \frac{M}{\rho} \left[R \left(\frac{\bar{n}_d^2 - 1}{\bar{n}_d^2 + 2} \right) 1.8 \text{ cm} - R \left(\frac{\bar{n}_d^2 - 1}{\bar{n}_d^2 + 2} \right) \alpha 9 \text{ cm} \right] , \qquad (15)$$

where,

R = Real part of

$\bar{n}_d = m - iK$,

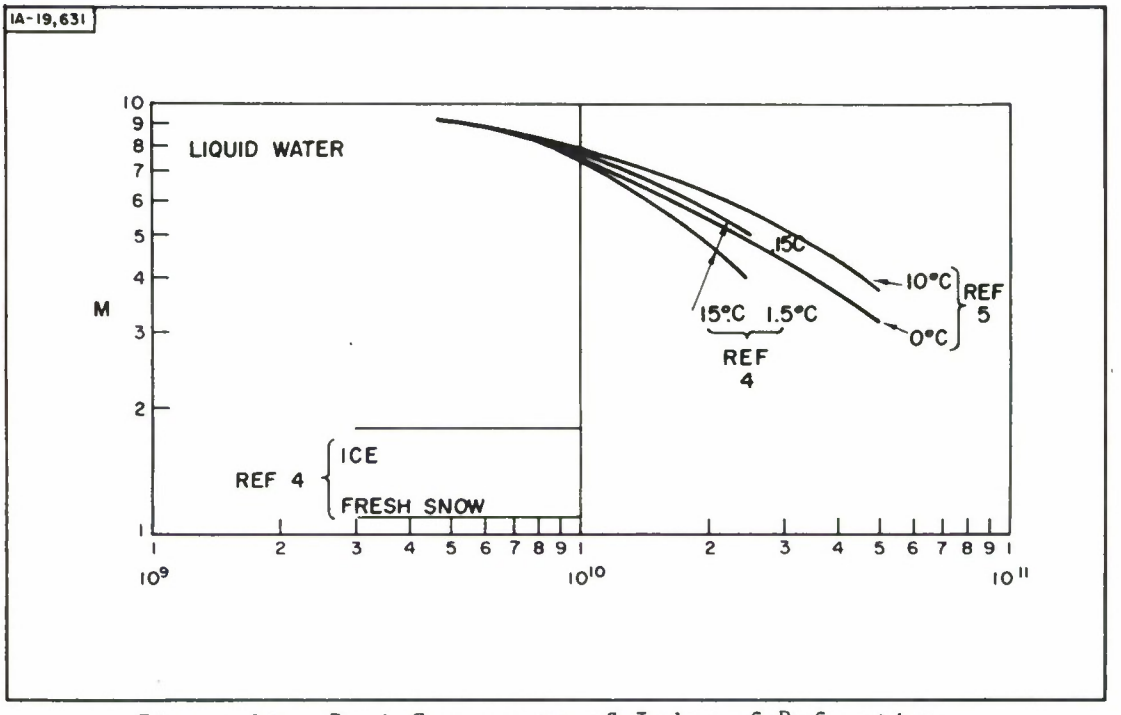

Figure 18. Real Components of Index of Refraction

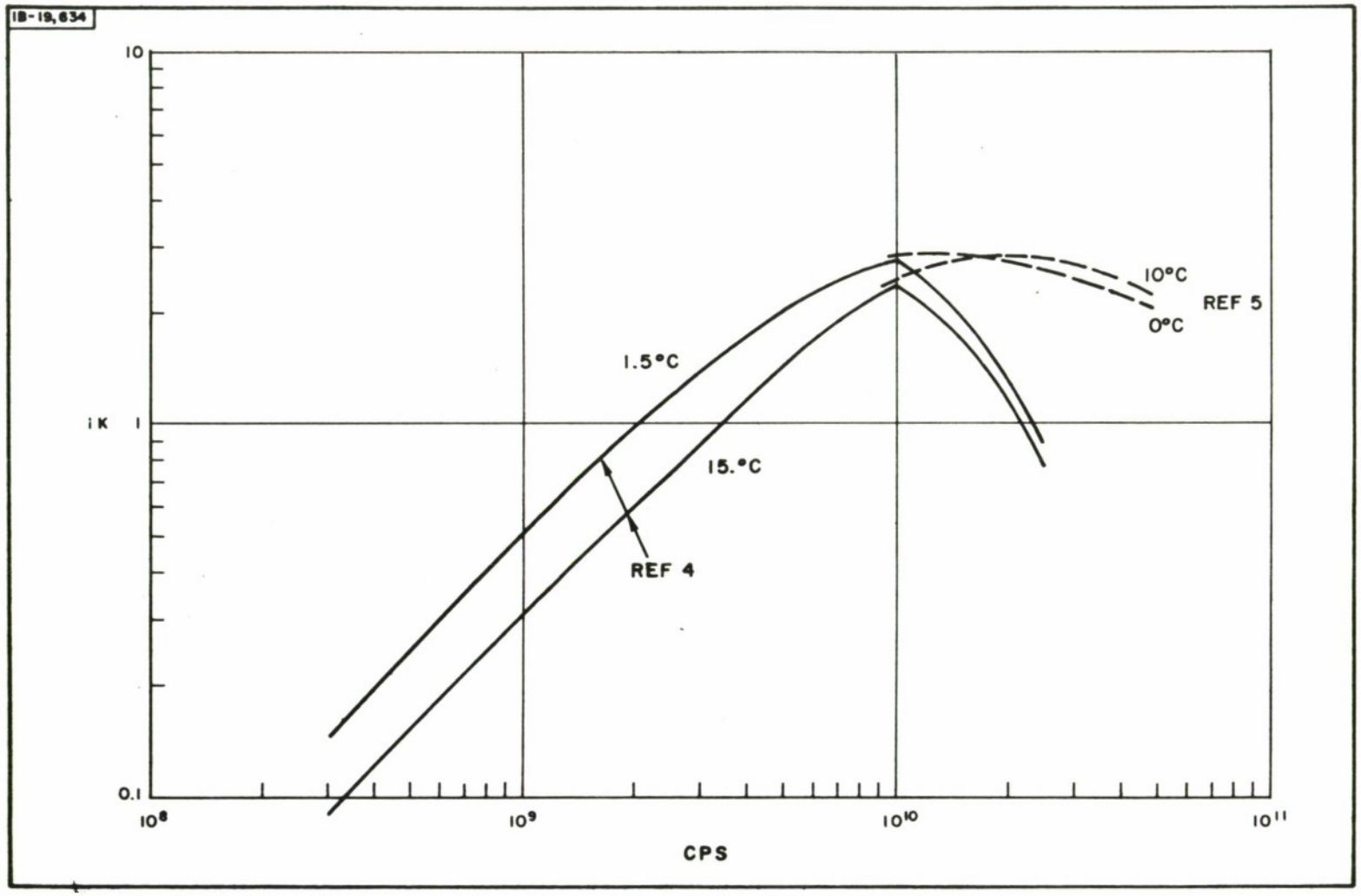

Figure 19. Imaginary Component of Index of Refraction

$$R = \frac{(m^2 - K^2 - 1)(m^2 - K^2 + 2) + 4m^2K^2}{(m^2 - K^2 + 2)^2 + 4m^2K^2} \quad . \qquad (16)$$

Using values obtained by interpolation and extrapolation of the data from the two sources, M = 10 micrograms per cm^3

Dispersion = 2.5 at 1.5 degrees [10]

= 0.0 N at 0 degrees C [3]

These values may be compared with 0.03 N units for vapor dispersion as determined in Reference 7, for 10 grams per $meter^3$ and 20 degrees C.

The data [10] are considered more reliable since the maxima of the imaginary component occurs nearer in frequency to the half-value point of dielectric constant as indicated by relaxation theory. Further, the lack of dispersion for the data from Reference 3 is not physically reasonable. The variation of dispersion with temperature for Reference 10 data is illustrated in Figure 20.

SNOW AND ICE CLOUDS

Snow and ice particles are not expected to be dispersive at the frequencies of interest as the nonresonant absorptions occur in the kc and mc range. However, partially melted or liquid-coated particles should approach values for water drops.

CONCLUSION

This preliminary estimate obviously does not include all the effects to be expected by scattering the multiple scattering of electromagnetic energy by real distribution of drops in a finite beam of microwave energy traversing a turbulent cloud.

However, it is apparent that dispersion will exist to at least the degree estimated and that more complete theory would indicate more dispersion of the same sign.

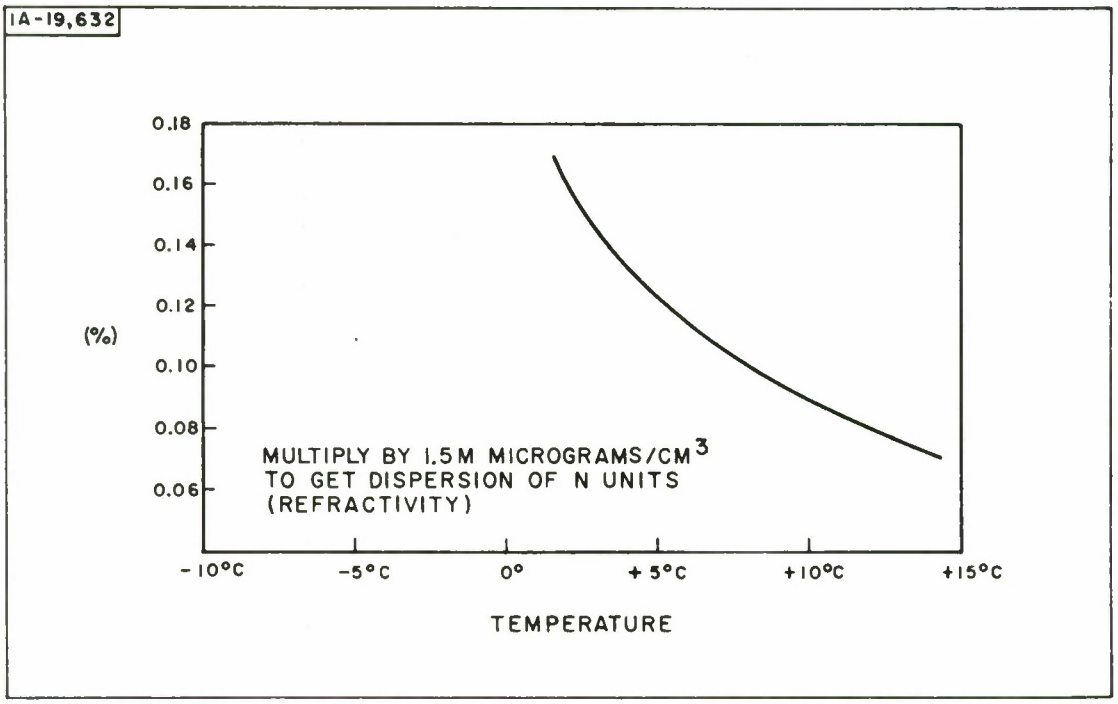

Figure 20. Percent Dispersion vs. Temperature

APPENDIX II

BASIC DATA

LIQ WATER DROPLET FIELD TEST DATA AUGUST 7.1963

Y	X	H2O	Y	X	H2O	Y	X	H2O	Y	X	H2O	CARD	NUMBER
5.0	18.0	0.2	4.5	18.0	0.1	4.0	18.0	0.3	..5	18.0	0.2		A7630001
3.0	18.0	0.2	5.5	18.5	0.6	5.0	18.5	0.8	4.5	18.5	0.7		A7630002
4.0	18.5	0.8	3.5	18.5	0.7	3.0	18.5	0.5	5.5	19.0	1.3		A7630003
5.0	19.0	1.4	4.5	19.0	1.2	4.0	19.0	1.1	..5	19.0	0.9		A7630004
3.0	19.0	0.5	6.0	19.5	1.0	5.5	19.5	1.5	5.0	19.5	1.5		A7630005
4.5	19.5	1.3	4.0	19.5	1.1	3.5	19.5	0.8	..0	19.5	0.5		A7630006
2.5	19.5	0.1	6.5	20.0	0.2	6.0	20.0	1.3	5.5	20.0	1.5		A7630007
5.0	20.0	1.4	4.5	20.0	1.2	4.0	20.0	1.1	..5	20.0	0.7		A7630008
3.0	20.0	0.4	6.5	20.5	0.5	6.0	20.5	0.8	5.5	20.5	1.0		A7630009
5.0	20.5	1.0	4.5	20.5	1.0	4.0	20.5	1.0	..5	20.5	0.7		A7630010
3.0	20.5	0.4	6.5	21.0	0.6	6.0	21.0	1.3	5.5	21.0	1.5		A7630011
5.0	21.0	1.4	4.5	21.0	1.2	4.0	21.0	1.1	..5	21.0	0.7		A7630012
3.0	21.0	0.4	2.5	21.0	0.1	6.5	21.5	0.4	6.0	21.5	1.5		A7630013
5.5	21.5	1.5	5.0	21.5	1.4	4.5	21.5	1.3	4.0	21.5	1.1		A7630014
3.5	21.5	0.7	3.0	21.5	0.4	2.5	21.5	0.1	6.5	22.0	0.6		A7630015
6.0	22.0	1.5	5.5	22.0	1.5	5.0	22.0	1.4	4.5	22.0	1.3		A7630016
4.0	22.0	1.1	3.5	22.0	0.7	3.0	22.0	0.5	6.5	22.5	0.2		A7630017
6.0	22.5	1.0	5.5	22.5	1.3	5.0	22.5	0.8	4.5	22.5	0.8		A7630018
4.0	22.5	0.8	3.5	22.5	0.4	3.0	22.5	0.3	5.5	23.0	0.4		A7630019
4.5	23.0	0.2	4.0	23.0	0.3	4.5	27.0	0.1	4.0	27.0	0.1		A7630020
3.0	27.0	0.1	5.5	27.5	0.2	5.0	27.5	0.3	4.5	27.5	0.3		A7630021
4.0	27.5	0.4	3.5	27.5	0.3	3.0	27.5	0.2	6.0	28.0	0.3		A7630022
5.5	28.0	0.8	5.0	28.0	0.8	4.5	28.0	0.9	4.0	28.0	0.8		A7630023
3.5	28.0	0.6	3.0	28.0	0.3	6.0	28.5	0.5	5.5	28.5	1.0		A7630024
5.0	28.5	1.0	4.5	28.5	1.0	4.0	28.5	0.8	..5	28.5	0.5		A7630025
3.0	28.5	0.3	6.0	29.0	0.5	5.5	29.0	1.0	5.0	29.0	1.0		A7630026
4.5	29.0	1.0	4.0	29.0	1.0	3.5	29.0	0.6	..0	29.0	0.3		A7630027
6.0	29.5	0.7	5.5	29.5	1.0	5.0	29.5	1.0	4.5	29.5	1.0		A7630028
4.0	29.5	0.8	3.5	29.5	0.5	3.0	29.5	0.3	6.0	30.0	0.3		A7630029
5.5	30.0	0.5	5.0	30.0	0.5	4.5	30.0	0.4	4.0	30.0	0.3		A7630030
3.5	30.0	0.2	3.0	30.0	0.2	5.0	30.5	0.1	4.5	30.5	0.2		A7630031
3.0	40.5	0.2	4.0	41.0	0.4	3.5	41.0	1.0	..0	41.0	0.7		A7630032
4.5	41.5	0.3	4.0	41.5	1.0	3.5	41.5	1.0	..0	41.5	0.8		A7630033
4.0	42.0	1.0	3.5	42.0	1.0	3.0	42.0	0.8	4.0	42.5	1.0		A7630034
3.5	42.5	1.0	3.0	42.5	0.7	4.0	43.0	1.0	..5	43.0	1.0		A7630035
3.0	43.0	0.6	4.5	43.5	0.3	4.0	43.5	1.0	..5	43.5	1.0		A7630036
3.0	43.5	0.8	2.5	43.5	0.2	4.5	44.0	0.2	4.0	44.0	0.6		A7630037
3.5	44.0	0.9	3.0	44.0	0.5	2.5	44.0	0.1	..0	45.5	0.5		A7630038
3.5	46.0	0.6	3.0	46.0	0.5	3.0	46.5	0.5	2.5	46.5	0.1		A7630039

3.0	55.0	0.3	3.5	55.5	0.5	3.0	55.5	0.5	2.5	55.5	0.1	A7630040
4.0	56.0	0.5	3.5	56.0	1.0	3.0	56.0	0.4	4.0	56.5	1.0	A7630041
3.5	56.5	0.8	3.0	56.5	0.4	2.5	56.5	0.1	4.0	57.0	0.9	A7630042
3.5	57.0	0.8	3.0	57.0	0.4	3.5	57.5	0.1	..0	58.5	0.3	A7630043
4.0	59.0	1.0	3.5	59.0	0.8	3.0	59.0	0.4	4.5	59.5	0.1	A7630044
4.0	59.5	1.0	3.5	59.5	0.8	3.0	59.5	0.4	2.5	59.5	0.1	A7630045
3.5	60.0	0.7	3.0	60.0	0.5	5.0	62.0	0.5	4.5	62.0	0.9	A7630046
4.0	62.0	0.7	3.5	62.0	0.6	3.0	62.0	0.3	6.0	62.5	0.4	A7630047
5.5	62.5	1.3	5.0	62.5	1.5	4.5	62.5	1.5	4.0	62.5	1.2	A7630048
3.5	62.5	0.7	3.0	62.5	0.4	6.5	63.0	0.5	6.0	63.0	1.5	A7630049
5.5	63.0	1.5	5.0	63.0	1.5	4.5	63.0	1.4	4.0	63.0	1.0	A7630050
3.5	63.0	0.7	3.0	63.0	0.4	6.5	63.5	1.0	6.0	63.5	1.5	A7630051
5.5	63.5	1.5	5.0	63.5	1.3	4.5	63.5	1.2	4.0	63.5	1.0	A7630052
3.5	63.5	0.7	3.0	63.5	0.3	6.5	64.0	1.0	6.0	64.0	1.5	A7630053
5.5	64.0	1.4	5.0	64.0	1.3	4.5	64.0	1.2	4.0	64.0	1.0	A7630054
3.5	64.0	0.7	3.0	64.0	0.3	6.5	64.5	0.5	6.0	64.5	1.5	A7630055
5.5	64.5	1.6	5.0	64.5	1.8	4.5	64.5	1.0	4.0	64.5	0.8	A7630056
3.5	64.5	0.6	3.0	64.5	0.3	6.5	65.0	0.5	6.0	65.0	1.5	A7630057
5.5	65.0	1.4	5.0	65.0	1.0	4.5	65.0	1.0	4.0	65.0	0.9	A7630058
3.5	65.0	0.5	3.0	65.0	0.3	6.5	65.5	0.2	6.0	65.5	1.2	A7630059
5.5	65.5	1.0	5.0	65.5	1.0	4.5	65.5	1.0	4.0	65.5	0.9	A7630060
3.5	65.5	0.6	3.0	65.5	0.3	5.5	66.0	1.0	5.0	66.0	1.0	A7630061
4.5	66.0	1.0	4.0	66.0	0.8	3.5	66.0	0.6	..0	66.0	0.3	A7630062
5.5	66.5	0.5	5.0	66.5	1.0	4.5	66.5	1.0	4.0	66.5	1.0	A7630063
3.5	66.5	0.7	3.0	66.5	0.3	2.5	66.5	0.1	5.5	67.0	0.2	A7630064
5.0	67.0	1.0	4.5	67.0	1.0	4.0	67.0	1.0	..5	67.0	0.5	A7630065
3.0	67.0	0.3	2.5	67.0	0.1	5.0	67.5	0.2	4.5	67.5	0.5	A7630066
4.0	67.5	0.5	5.0	76.5	0.4	4.5	76.5	0.5	4.0	76.5	0.3	A7630067
3.5	76.0	0.3	3.0	76.5	0.2	5.5	77.0	0.5	5.0	77.0	1.0	A7630068
4.5	77.0	1.1	4.0	77.0	1.0	3.5	77.0	0.7	..0	77.0	0.4	A7630069
5.5	77.5	1.2	5.0	77.5	1.5	4.5	77.5	1.3	4.0	77.5	1.1	A7630070
3.5	77.5	0.7	3.0	77.5	0.4	6.5	78.0	0.5	6.0	78.0	1.0	A7630071
5.5	78.0	1.5	5.0	78.0	1.5	4.5	78.0	1.2	4.0	78.0	1.0	A7630072
3.5	78.0	0.7	3.0	78.0	0.3	2.5	78.0	0.1	6.5	78.5	0.8	A7630073
6.0	78.5	1.5	5.5	78.5	1.5	5.0	78.5	1.4	4.5	78.5	1.2	A7630074
4.0	78.5	1.0	3.5	78.5	0.6	3.0	78.5	0.3	6.5	79.0	1.0	A7630075
6.0	79.0	1.5	5.5	79.0	1.5	5.0	79.0	1.3	4.5	79.0	1.2	A7630076
4.0	79.0	1.0	3.5	79.0	0.7	3.0	79.0	0.3	2.5	79.0	0.1	A7630077
6.5	79.5	1.3	6.0	79.5	1.5	5.5	79.5	1.5	5.0	79.5	1.3	A7630078
4.5	79.5	1.2	4.0	79.5	1.0	3.5	79.5	0.7	..0	79.5	0.4	A7630079
2.5	79.5	0.1	7.0	80.0	0.2	6.5	80.0	1.0	6.0	80.0	1.5	A7630080
5.5	80.0	1.5	5.0	80.0	1.3	4.5	80.0	1.2	4.0	80.0	1.0	A7630081
3.5	80.0	0.8	3.0	80.0	0.5	2.5	80.0	0.2	7.0	80.5	0.1	A7630082
6.5	80.5	1.5	6.0	80.5	1.5	5.5	80.5	1.5	5.0	80.5	1.3	A7630083

4.5	80.5	1.2	4.0	80.5	1.0	3.5	80.5	0.8	..0	80.5	0.5	A7630084
2.5	80.5	0.2	6.5	81.0	1.0	6.0	81.0	1.5	5.5	81.0	1.5	A7630085
5.0	81.0	1.2	4.5	81.0	1.2	4.0	81.0	1.0	..5	81.0	0.7	A7630086
3.0	81.0	0.5	2.5	81.0	0.2	6.5	81.5	0.5	6.0	81.5	0.7	A7630087
5.5	81.5	0.8	5.0	81.5	0.6	4.5	81.5	0.5	4.0	81.5	0.5	A7630088
3.5	81.5	0.5	3.0	81.5	0.3	2.5	81.5	0.1	6.5	82.0	0.5	A7630089
6.0	82.0	0.5	5.5	82.0	0.5	5.0	82.0	0.5	4.5	82.0	0.6	A7630090
4.0	82.0	0.7	3.5	82.0	0.5	3.0	82.0	0.3	2.5	82.0	0.1	A7630091
6.5	82.5	0.8	6.0	82.5	1.2	5.5	82.5	1.1	5.0	82.5	1.2	A7630092
4.5	82.5	1.2	4.0	82.5	1.1	3.5	82.5	0.8	..0	82.5	0.5	A7630093
2.5	82.5	0.2	6.5	83.0	1.0	6.0	83.0	1.5	5.5	83.0	1.5	A7630094
5.0	83.0	1.3	4.5	83.0	1.2	4.0	83.0	1.1	..5	83.0	0.8	A7630095
3.0	83.0	0.5	2.5	83.0	0.1	6.5	83.5	1.0	6.0	83.5	1.5	A7630096
5.5	83.5	1.5	5.0	83.5	1.3	4.5	83.5	1.2	4.0	83.5	1.0	A7630097
3.5	83.5	0.8	3.0	83.5	0.4	2.5	83.5	0.2	6.5	84.0	1.0	A7630098
6.0	84.0	1.5	5.5	84.0	1.5	5.0	84.0	1.3	4.5	84.0	1.2	A7630099
4.0	84.0	1.1	3.5	84.0	0.8	3.0	84.0	0.4	6.5	84.5	0.9	A7630100
6.0	84.5	1.5	5.5	84.5	1.4	5.0	84.5	1.2	4.5	84.5	1.2	A7630101
4.0	84.5	1.1	3.5	84.5	0.8	3.0	84.5	0.5	6.5	85.0	0.5	A7630102
6.0	85.0	0.5	5.5	85.0	0.2	5.0	85.0	0.8	4.5	85.0	0.9	A7630103
4.0	85.0	0.8	3.5	85.0	0.8	3.0	85.0	0.6	2.5	85.0	0.2	A7630104
5.0	85.5	0.3	4.5	85.5	0.6	4.0	85.5	0.7	..5	85.5	0.6	A7630105
3.0	85.5	0.5	2.5	85.5	0.2	3.5	86.0	0.2	10.5	91.0	0.5	A7630106
10.0	91.0	1.0	9.5	91.0	0.1	9.0	91.0	0.3	8.5	91.0	0.5	A7630107
8.0	91.0	0.5	7.5	91.0	0.5	3.0	91.0	0.1	11.0	91.5	0.5	A7630108
10.5	91.5	1.4	10.0	91.5	1.7	9.5	91.5	1.6	9.0	91.5	1.6	A7630109
8.5	91.5	1.6	8.0	91.5	1.6	7.5	91.5	1.4	7.0	91.5	1.0	A7630110
6.5	91.5	0.5	6.0	91.5	0.4	5.5	91.5	0.3	5.0	91.5	0.4	A7630111
4.5	91.5	0.4	4.0	91.5	0.4	3.5	91.5	0.3	..0	91.5	0.2	A7630112
11.5	92.0	0.1	11.0	92.0	1.2	10.5	92.0	1.9	10.0	92.0	2.2	A7630113
9.5	92.0	2.1	9.0	92.0	2.1	8.5	92.0	2.0	8.0	92.0	1.8	A7630114
7.5	92.0	1.7	7.0	92.0	1.6	6.5	92.0	1.6	6.0	92.0	1.5	A7630115
5.5	92.0	1.0	5.0	92.0	0.9	4.5	92.0	0.8	4.0	92.0	0.8	A7630116
3.5	92.0	0.7	3.0	92.0	0.5	2.5	92.0	0.2	11.0	92.5	1.0	A7630117
10.5	92.5	2.1	10.0	92.5	2.4	9.5	92.5	2.3	9.0	92.5	2.2	A7630118
8.5	92.5	2.1	8.0	92.5	1.9	7.5	92.5	1.8	7.0	92.5	1.8	A7630119
6.5	92.5	1.7	6.0	92.5	1.6	5.5	92.5	1.4	5.0	92.5	1.2	A7630120
4.5	92.5	1.0	4.0	92.5	0.9	3.5	92.5	0.6	..0	92.5	0.5	A7630121
2.5	92.5	0.1	11.5	93.0	.5	11.0	93.0	1.6	10.5	93.0	2.5	A7630122
10.0	93.0	2.4	9.5	93.0	2.3	9.0	93.0	2.2	8.5	93.0	2.0	A7630123
8.0	93.0	1.9	7.5	93.0	1.8	7.0	93.0	1.7	6.5	93.0	1.6	A7630124
6.0	93.0	1.5	5.5	93.0	1.4	5.0	93.0	1.3	4.5	93.0	1.1	A7630125
4.0	93.0	1.0	3.5	93.0	0.7	3.0	93.0	0.5	2.5	93.0	0.1	A7630126

12.0	93.5	0.6	11.5	93.5	1.6	11.0	93.5	2.4	10.5	93.5	2.5	A7630127
10.0	93.5	2.4	9.5	93.5	2.3	9.0	93.5	2.2	8.5	93.5	2.1	A7630128
8.0	93.5	2.0	7.5	93.5	1.9	7.0	93.5	1.8	6.5	93.5	1.7	A7630129
6.0	93.5	1.6	5.5	93.5	1.5	5.0	93.5	1.4	4.5	93.5	1.2	A7630130
4.0	93.5	1.0	3.5	93.5	0.3	3.0	93.5	0.5	2.5	93.5	0.1	A7630131
12.0	94.0	0.5	11.5	94.0	1.9	11.0	94.0	2.5	10.5	94.0	2.5	A7630132
10.0	94.0	2.4	9.5	94.0	2.3	9.0	94.0	2.2	8.5	94.0	2.1	A7630133
8.0	94.0	2.0	7.5	94.0	1.9	7.0	94.0	1.8	6.5	94.0	1.7	A7630134
6.0	94.0	1.6	5.5	94.0	1.5	5.0	94.0	1.3	4.5	94.0	1.2	A7630135
4.0	94.0	0.4	3.5	94.0	0.3	3.0	94.0	0.5	2.5	94.0	0.1	A7630136
12.0	94.5	0.1	11.5	94.5	1.5	11.0	94.5	2.0	10.5	94.5	2.3	A7630137
10.0	94.5	2.4	9.5	94.5	2.3	9.0	94.5	2.2	8.5	94.5	2.0	A7630138
8.0	94.5	1.9	7.5	94.5	1.8	7.0	94.5	1.7	6.5	94.5	1.6	A7630139
6.0	94.5	1.6	5.5	94.5	0.4	5.0	94.5	0.3	4.5	94.5	0.1	A7630140
4.0	94.5	0.4	3.5	94.5	0.2	3.0	94.5	0.5	2.5	94.5	0.1	A7630141
12.0	95.0	0.5	11.5	95.0	1.0	11.0	95.0	1.0	10.5	95.0	1.0	A7630142
10.0	95.0	1.0	9.5	95.0	1.3	9.0	95.0	1.3	8.5	95.0	1.3	A7630143
8.0	95.0	1.3	7.5	95.0	1.4	7.0	95.0	1.4	6.5	95.0	1.4	A7630144
6.0	95.0	1.4	5.5	95.0	1.3	5.0	95.0	1.1	4.5	95.0	0.9	A7630145
4.0	95.0	0.7	3.5	95.0	0.6	3.0	95.0	0.5	2.5	95.0	0.1	A7630146
12.0	95.5	0.3	11.5	95.5	0.6	11.0	95.5	1.5	10.5	95.5	1.5	A7630147
10.0	95.5	1.5	9.5	95.5	1.5	9.0	95.5	1.5	8.5	95.5	1.3	A7630148
8.0	95.5	1.2	7.5	95.5	1.0	7.0	95.5	1.0	6.5	95.5	1.0	A7630149
6.0	95.5	1.0	5.5	95.5	1.0	5.0	95.5	1.0	4.5	95.5	1.0	A7630150
4.0	95.5	0.6	3.5	95.5	0.5	3.0	95.5	0.4	2.5	95.5	0.1	A7630151
11.5	96.0	0.3	11.0	96.0	1.5	10.5	96.0	2.0	10.0	96.0	2.0	A7630152
9.5	96.0	2.0	9.0	96.0	2.0	8.5	96.0	1.9	8.0	96.0	1.8	A7630153
7.5	96.0	1.7	7.0	96.0	1.6	6.5	96.0	1.5	6.0	96.0	1.4	A7630154
5.5	96.0	1.3	5.0	96.0	1.1	4.5	96.0	1.0	4.0	96.0	0.7	A7630155
3.5	96.0	0.6	3.0	96.0	0.4	2.5	96.0	0.1	11.5	96.5	0.4	A7630156
11.0	96.5	1.5	10.5	96.5	1.5	10.0	96.5	1.6	9.5	96.5	1.5	A7630157
9.0	96.5	1.5	8.5	96.5	1.5	8.0	96.5	1.6	7.5	96.5	1.6	A7630158
7.0	96.5	1.6	6.5	96.5	1.6	6.0	96.5	1.5	5.5	96.5	1.3	A7630159
5.0	96.5	1.2	4.5	96.5	1.0	4.0	96.5	0.9	3.5	96.5	0.7	A7630160
3.0	96.5	0.4	2.5	96.5	0.1	11.0	97.0	0.3	10.0	97.0	0.5	A7630161
8.0	97.0	0.6	7.5	97.0	1.4	7.0	97.0	1.6	6.5	97.0	1.6	A7630162
6.0	97.0	1.5	5.5	97.0	1.4	5.0	97.0	1.3	4.5	97.0	1.0	A7630163
4.0	97.0	0.7	3.5	97.0	0.6	3.0	97.0	0.4	2.5	97.0	0.1	A7630164
8.0	97.5	0.3	7.5	97.5	1.0	7.0	97.5	1.0	6.5	97.5	1.0	A7630165
6.0	97.5	1.5	5.5	97.5	1.4	5.0	97.5	1.2	4.5	97.5	1.0	A7630166
4.0	97.5	0.6	3.5	97.5	0.4	3.0	97.5	0.3	2.5	97.5	0.1	A7630167
8.0	98.0	0.5	7.5	98.0	1.0	7.0	98.0	1.1	6.5	98.0	1.3	A7630168
6.0	98.0	1.3	5.5	98.0	1.2	5.0	98.0	1.1	4.5	98.0	0.9	A7630169
4.0	98.0	0.7	3.5	98.0	0.6	3.0	98.0	0.4	2.5	98.0	0.1	A7630170

8.5	98.5	0.4	8.0	98.5	1.1	7.5	98.5	1.1	7.0	98.5	1.0	A7630171
6.5	98.5	1.0	6.0	98.5	1.0	5.5	98.5	1.0	5.0	98.5	1.0	A7630172
4.5	98.5	0.9	4.0	98.5	0.7	3.5	98.5	0.5	..0	98.5	0.1	A7630173
8.5	99.0	0.7	8.0	99.0	1.5	7.5	99.0	1.5	7.0	99.0	1.5	A7630174
6.5	99.0	1.5	6.0	99.0	1.4	5.5	99.0	1.3	5.0	99.0	1.2	A7630175
4.5	99.0	1.0	4.0	99.0	0.9	3.5	99.0	0.7	..0	99.0	0.5	A7630176
2.5	99.0	0.1	8.5	99.5	1.0	8.0	99.5	1.5	7.5	99.5	1.5	A7630177
7.0	99.5	1.5	6.5	99.5	1.5	6.0	99.5	1.4	5.5	99.5	1.3	A7630178
5.0	99.5	1.2	4.5	99.5	1.0	4.0	99.5	0.7	..5	99.5	0.6	A7630179
3.0	99.5	0.5	2.5	99.5	0.1	9.0	100.0	0.9	8.5	100.0	1.3	A7630180
8.0	100.0	1.5	7.5	100.0	1.5	7.0	100.0	1.5	6.5	100.0	1.5	A7630181
6.0	100.0	1.4	5.5	100.0	1.3	5.0	100.0	1.2	4.5	100.0	1.0	A7630182
4.0	100.0	0.9	3.5	100.0	0.7	3.0	100.0	0.5	2.5	100.0	0.1	A7630183
9.0	100.5	0.3	8.5	100.5	0.7	8.0	100.5	1.5	7.5	100.5	1.5	A7630184
7.0	100.5	1.5	6.5	100.5	1.5	6.0	100.5	0.9	5.5	100.5	0.8	A7630185
5.0	100.5	0.7	4.5	100.5	1.0	4.0	100.5	0.8	..5	100.5	0.6	A7630186
3.0	100.5	0.4	2.5	100.5	0.1	8.0	101.0	0.4	7.5	101.0	0.5	A7630187
7.0	101.0	1.0	6.5	101.0	1.1	6.0	101.0	1.2	5.5	101.0	1.2	A7630188
5.0	101.0	1.0	4.5	101.0	0.6	4.0	101.0	0.4	..5	101.0	0.3	A7630189
3.0	101.0	0.2	2.5	101.0	0.1	7.0	101.5	0.4	6.5	101.5	0.4	A7630190
6.0	101.5	0.6	5.5	101.5	0.5	5.0	101.5	0.1	4.0	101.5	0.2	A7630191
3.5	101.5	0.1										A7630192
999.9												

LIQ WATER DROPLET FIELD TEST DATA AUGUST 8.1963

Y	X	H2O	Y	X	H2O	Y	X	H2O	Y	X	H2O	CARD	NUMBER
8.5	18.0	0.5	8.0	18.0	1.0	7.5	18.0	1.0	7.0	18.0	0.9		A8630001
6.5	18.0	1.3	6.0	18.0	1.2	5.5	18.0	0.6	5.0	18.0	0.4		A8630002
4.5	18.0	0.8	4.0	18.0	0.8	3.5	18.0	0.6	8.5	18.5	1.1		A8630003
8.0	18.5	1.7	7.5	18.5	1.8	7.0	18.5	1.9	6.5	18.5	1.8		A8630004
6.0	18.5	1.7	5.5	18.5	1.6	5.0	18.5	1.6	4.5	18.5	1.6		A8630005
4.0	18.5	1.4	3.5	18.5	1.0	3.0	18.5	0.3	9.0	19.0	0.5		A8630006
8.5	19.0	1.5	8.0	19.0	1.9	7.5	19.0	2.0	7.0	19.0	2.0		A8630007
6.5	19.0	2.0	6.0	19.0	2.0	5.5	19.0	2.0	5.0	19.0	2.0		A8630008
4.5	19.0	1.8	4.0	19.0	1.6	3.5	19.0	1.1	..0	19.0	0.4		A8630009
9.5	19.5	0.2	9.0	19.5	1.5	8.5	19.5	1.9	8.0	19.5	2.0		A8630010
7.5	19.5	2.0	7.0	19.5	2.0	6.5	19.5	2.0	6.0	19.5	2.0		A8630011
5.5	19.5	2.0	5.0	19.5	2.0	4.5	19.5	1.8	4.0	19.5	1.6		A8WT0012
3.5	19.5	1.5	3.0	19.5	0.3	9.0	20.0	1.6	8.5	20.0	2.0		A8630013
8.0	20.0	2.0	7.5	20.0	2.0	7.0	20.0	2.0	6.5	20.0	2.0		A8630014
6.0	20.0	2.0	5.5	20.0	2.0	5.0	20.0	2.0	4.5	20.0	1.8		A8630015
4.0	20.0	1.6	3.5	20.0	0.9	3.0	20.0	0.2	9.5	20.5	.9		A8630016
9.0	20.5	1.7	8.5	20.5	1.9	8.0	20.5	2.0	7.5	20.5	2.0		A8630017
7.0	20.5	2.0	6.5	20.5	2.0	6.0	20.5	2.0	5.5	20.5	2.0		A8630018
5.0	20.5	2.0	4.5	20.5	1.9	4.0	20.5	1.6	..5	20.5	0.9		A8630019
3.0	20.5	0.2	9.5	21.0	0.2	9.0	21.0	1.2	8.5	21.0	1.6		A8630020
8.0	21.0	1.8	7.5	21.0	2.0	7.0	21.0	2.0	6.5	21.0	2.0		A8630021
6.0	21.0	2.0	5.5	21.0	2.0	5.0	21.0	2.0	4.5	21.0	1.8		A8630022
4.0	21.0	1.6	3.5	21.0	0.9	3.0	21.0	0.2	8.5	21.5	1.0		A8630023
8.0	21.5	1.6	7.5	21.5	1.7	7.0	21.5	1.8	6.5	21.5	1.8		A8630024
6.0	21.5	1.7	5.5	21.5	1.6	5.0	21.5	1.6	4.5	21.5	1.6		A8630025
4.0	21.5	1.3	3.5	21.5	0.8	3.0	21.5	0.2	8.0	22.0	0.9		A8630026
7.5	22.0	1.2	7.0	22.0	1.2	6.5	22.0	1.2	6.0	22.0	0.9		A8630027
5.5	22.0	0.7	5.0	22.0	0.8	4.5	22.0	0.9	4.0	22.0	0.8		A8630028
3.5	22.0	0.5	3.0	22.0	0.2	5.0	25.0	0.6	4.5	25.0	1.0		A8630029
4.0	25.0	1.0	3.5	25.0	0.7	6.0	25.5	1.1	5.5	25.5	1.1		A8630030
5.0	25.5	1.5	4.5	25.5	1.5	4.0	25.5	1.2	..5	25.5	0.8		A8630031
6.5	26.0	0.8	6.0	26.0	1.5	5.5	26.0	1.5	5.0	26.0	1.5		A8630032
4.5	26.0	1.5	4.0	26.0	1.2	3.5	26.0	0.9	..0	26.0	0.2		A8630033
6.5	26.5	1.4	6.0	26.5	1.5	5.5	26.5	1.5	5.0	26.5	1.5		A8630034
4.5	26.5	1.5	4.0	26.5	1.2	3.5	26.5	1.0	..0	26.5	0.4		A8630035
6.5	27.0	1.0	6.0	27.0	1.5	5.5	27.0	1.5	5.0	27.0	1.5		A8630036
4.5	27.0	1.4	4.0	27.0	1.2	3.5	27.0	1.0	..0	27.0	0.4		A8630037
6.0	27.5	0.3	5.5	27.5	1.1	5.0	27.5	1.0	4.5	27.5	0.6		A8630038
4.0	27.5	0.8	3.5	27.5	0.5	6.0	33.5	0.1	5.5	33.5	0.2		A8630039
5.0	33.5	0.2	4.5	33.5	0.2	4.0	33.5	0.2	..5	33.5	0.1		A8630040

7.0	34.0	0.2	6.5	34.0	0.3	6.0	34.0	0.4	5.5	34.0	0.5	A8630041
5.0	34.0	0.5	4.5	34.0	0.5	4.0	34.0	0.5	..5	34.0	0.3	A8630042
3.0	34.0	0.1	7.5	34.5	0.2	7.0	34.5	0.4	6.5	34.5	0.6	A8630043
6.0	34.5	0.8	5.5	34.5	0.8	5.0	34.5	0.9	4.5	34.5	0.8	A8630044
4.0	34.5	0.6	3.5	34.5	0.4	3.0	34.5	0.1	9.5	35.0	0.2	A8630045
9.0	35.0	0.3	8.0	35.0	0.2	7.5	35.0	0.4	7.0	35.0	0.8	A8630046
6.5	35.0	1.1	6.0	35.0	1.2	5.5	35.0	1.3	5.0	35.0	1.3	A8630047
4.5	35.0	1.2	4.0	35.0	0.8	3.5	35.0	0.4	..0	35.0	0.1	A8630048
11.0	35.5	0.3	10.5	35.5	0.5	10.0	35.5	0.6	9.5	35.5	0.7	A8630049
9.0	35.5	0.7	8.5	35.5	0.4	8.0	35.5	0.5	7.5	35.5	0.8	A8630050
7.0	35.5	1.3	6.5	35.5	1.6	6.0	35.5	1.7	5.5	35.5	1.7	A8630051
5.0	35.5	1.6	4.5	35.5	1.4	4.0	35.5	.9	..5	35.5	.4	A8630052
12.0	36.0	0.5	11.5	36.0	0.8	11.0	36.0	0.9	10.5	36.0	1.0	A8630053
10.0	36.0	1.0	9.5	36.0	0.9	9.0	36.0	0.8	8.5	36.0	0.8	A8630054
8.0	36.0	1.0	7.5	36.0	1.4	7.0	36.0	1.8	6.5	36.0	2.0	A8630055
6.0	36.0	2.0	5.5	36.0	1.8	5.0	36.0	1.6	4.5	36.0	1.4	A8630056
4.0	36.0	0.9	3.5	36.0	0.4	12.5	36.5	0.8	12.0	36.5	1.1	A8630057
1.5	36.5	1.3	11.0	36.5	1.4	10.5	36.5	1.4	10.0	36.5	1.4	A8630058
9.5	36.5	1.5	9.0	36.5	1.4	8.5	36.5	1.4	8.0	36.5	1.4	A8630059
7.5	36.5	1.7	7.0	36.5	2.0	6.5	36.5	2.0	6.0	36.5	1.9	A8630060
5.5	36.5	1.8	5.0	36.5	1.6	4.5	36.5	1.4	4.0	36.5	.9	A8630061
3.5	36.5	0.4	13.0	37.0	0.7	12.5	37.0	1.4	12.0	37.0	1.6	A8630062
11.5	37.0	1.8	11.0	37.0	1.9	10.5	37.0	1.9	10.0	37.0	2.0	A8630063
9.5	37.0	2.0	9.0	37.0	2.0	8.5	37.0	1.8	8.0	37.0	1.5	A8630064
7.5	37.0	1.7	7.0	37.0	2.0	6.5	37.0	2.0	6.0	37.0	2.0	A8630065
5.5	37.0	1.8	5.0	37.0	1.6	4.5	37.0	1.4	4.0	37.0	0.8	A8630066
3.5	37.0	0.4	13.5	37.5	0.4	13.0	37.5	1.3	12.5	37.5	1.9	A8630067
6.0	37.5	2.1	11.5	37.5	2.1	11.0	37.5	2.1	10.5	37.5	2.1	A8630068
0.0	37.5	2.1	9.5	37.5	2.0	9.0	37.5	2.0	8.5	37.5	2.0	A8630069
8.0	37.5	1.5	7.5	37.5	1.5	7.0	37.5	2.0	6.5	37.5	2.0	A8630070
6.0	37.5	2.0	5.5	37.5	1.8	5.0	37.5	1.6	4.5	37.5	1.2	A8630071
4.0	37.5	0.7	3.5	37.5	0.4	13.5	38.0	0.9	1..0	38.0	2.0	A8630072
12.5	38.0	2.4	12.0	38.0	2.4	11.5	38.0	2.4	11.0	38.0	2.3	A8630073
10.5	38.0	2.2	10.0	38.0	2.2	9.5	38.0	2.1	9.0	38.0	2.0	A8630074
8.5	38.0	2.0	8.0	38.0	1.6	7.5	38.0	1.5	7.0	38.0	1.7	A8630075
6.5	38.0	2.0	6.0	38.0	1.9	5.5	38.0	1.8	5.0	38.0	1.6	A8630076
4.5	38.0	1.0	4.0	38.0	0.6	3.5	38.0	0.3	14.0	38.0	1.0	A8630077
13.5	38.5	2.0	13.0	38.5	2.5	12.5	38.5	2.5	12.0	38.5	2.4	A8630078
11.5	38.5	2.3	11.0	38.5	2.3	10.5	38.5	2.2	10.0	38.5	2.2	A8630079
9.5	38.5	2.1	9.0	38.5	2.0	8.5	38.5	1.9	8.0	38.5	1.5	A8630080
7.5	38.5	1.5	7.0	38.5	1.5	6.5	38.5	1.5	6.0	38.5	1.6	A8630081
5.5	38.5	1.5	5.0	38.5	1.4	4.5	38.5	0.9	4.0	38.5	0.5	A8630082
3.5	38.5	0.2	14.5	39.0	0.4	14.0	39.0	1.9	1..5	39.0	2.5	A8630083

13.0	39.0	2.5	12.5	39.0	2.5	12.0	39.0	2.4	11.5	39.0	2.4	A8630084
11.0	39.0	2.3	10.5	39.0	2.3	10.0	39.0	2.2	9.5	39.0	2.1	A8630085
9.0	39.0	2.1	8.5	39.0	1.7	8.0	39.0	1.5	7.5	39.0	1.5	A8630086
7.0	39.0	1.5	6.5	39.0	1.5	6.0	39.0	1.5	5.5	39.0	1.5	A8630087
5.0	39.0	1.5	4.5	39.0	0.8	4.0	39.0	0.5	..5	39.0	0.2	A8630088
14.5	39.5	1.4	14.0	39.5	2.5	13.5	39.5	2.5	1..0	39.5	2.5	A8630089
12.5	39.5	2.5	12.0	39.5	2.4	11.5	39.5	2.4	11.0	39.5	2.3	A8630090
10.5	39.5	2.3	10.0	39.5	2.2	9.5	39.5	2.2	9.0	39.5	2.1	A8630091
8.5	39.5	1.8	8.0	39.5	1.5	7.5	39.5	1.5	7.0	39.5	2.0	A8630092
6.5	39.5	2.0	6.0	39.5	1.8	5.5	39.5	1.6	5.0	39.5	1.5	A8630093
4.5	39.5	0.8	4.0	39.5	0.5	3.5	39.5	0.2	15.0	40.0	0.5	A8630094
14.5	40.0	2.1	14.0	40.0	2.5	13.5	40.0	2.5	1..0	40.0	2.5	A8630095
12.5	40.0	2.5	12.0	40.0	2.4	11.5	40.0	2.4	11.0	40.0	2.3	A8630096
10.5	40.0	2.3	10.0	40.0	2.2	9.5	40.0	2.2	9.0	40.0	2.1	A8630097
8.5	40.0	2.0	8.0	40.0	1.5	7.5	40.0	1.5	7.0	40.0	2.0	A8630098
6.5	40.0	2.0	6.0	40.0	1.9	5.5	40.0	1.7	5.0	40.0	1.5	A8630099
4.5	40.0	1.0	4.0	40.0	0.5	3.5	40.0	0.3	..0	40.0	0.1	A8630100
15.0	40.5	0.2	14.5	40.5	2.2	14.0	40.5	2.5	1..5	40.5	2.5	A8630101
13.0	40.5	2.5	12.5	40.5	2.5	12.0	40.5	2.4	11.5	40.5	2.4	A8630102
11.0	40.5	2.3	10.5	40.5	2.3	10.0	40.5	2.2	9.5	40.5	2.2	A8630103
9.0	40.5	2.1	8.5	40.5	2.0	8.0	40.5	1.6	7.5	40.5	1.5	A8630104
7.0	40.5	1.6	6.5	40.5	1.8	6.0	40.5	1.7	5.5	40.5	1.6	A8630105
5.0	40.5	1.4	4.5	40.5	1.0	4.0	40.5	0.6	..5	40.5	0.3	A8630106
3.0	40.5	0.1	15.0	41.0	0.5	14.5	41.0	2.0	14.0	41.0	2.5	A8630107
13.5	41.0	2.5	13.0	41.0	2.5	12.5	41.0	2.4	12.0	41.0	2.2	A8630108
11.5	41.0	2.1	11.0	41.0	2.1	10.5	41.0	2.1	10.0	41.0	2.0	A8630109
9.5	41.0	2.0	9.0	41.0	2.0	8.5	41.0	1.7	8.0	41.0	1.5	A8630110
7.5	41.0	1.5	7.0	41.0	1.5	6.5	41.0	1.5	6.0	41.0	1.5	A8630111
5.5	41.0	1.4	5.0	41.0	1.4	4.5	41.0	1.2	4.0	41.0	0.6	A8630112
3.5	41.0	0.3	3.0	41.0	0.1	15.0	41.5	0.5	14.5	41.5	1.7	A8630113
14.0	41.5	2.0	13.5	41.5	2.2	13.0	41.5	2.0	12.5	41.5	1.6	A8630114
12.0	41.5	1.2	11.5	41.5	1.0	11.0	41.5	1.0	10.5	41.5	0.9	A8630115
10.0	41.5	1.0	9.5	41.5	0.9	9.0	41.5	1.2	8.5	41.5	1.3	A8630116
8.0	41.5	1.4	7.5	41.5	1.8	7.0	41.5	1.8	6.5	41.5	1.7	A8630117
6.0	41.5	1.9	5.5	41.5	1.7	5.0	41.5	1.6	4.5	41.5	1.2	A8630118
4.0	41.5	0.7	3.5	41.5	0.4	3.0	41.5	0.1	14.5	42.0	1.5	A8630119
14.0	42.0	1.2	13.5	42.0	0.9	13.0	42.0	1.0	12.5	42.0	1.1	A8630120
12.0	42.0	1.1	11.5	42.0	1.0	11.0	42.0	1.0	10.5	42.0	1.1	A8630121
10.0	42.0	1.3	9.5	42.0	1.8	9.0	42.0	1.8	8.5	42.0	1.6	A8630122
8.0	42.0	1.5	7.5	42.0	2.0	7.0	42.0	2.0	6.5	42.0	2.0	A8630123
6.0	42.0	1.9	5.5	42.0	1.7	5.0	42.0	1.5	4.5	42.0	1.2	A8630124
4.0	42.0	0.8	3.5	42.0	0.3	3.0	42.0	0.1	14.5	42.5	1.2	A8630125
14.0	42.5	1.7	13.5	42.5	2.1	13.0	42.5	2.5	12.5	42.5	2.5	A8630126
12.0	42.5	2.2	11.5	42.5	2.1	11.0	42.5	2.1	10.5	42.5	2.1	A8630127

10.0	42.5	2.1	9.5	42.5	2.1	9.0	42.5	2.0	8.5	42.5	1.5	A8630128
8.0	42.5	1.5	7.5	42.5	2.0	7.0	42.5	2.0	6.5	42.5	2.0	A8630129
6.0	42.5	1.9	5.5	42.5	1.7	5.0	42.5	1.6	4.5	42.5	1.2	A8630130
4.0	42.5	0.7	3.5	42.5	0.3	3.0	42.5	0.1	14.5	43.0	0.5	A8630131
14.0	43.0	1.6	13.5	43.0	2.3	13.0	43.0	2.5	12.5	43.0	2.5	A8630132
12.0	43.0	2.3	11.5	43.0	2.3	11.0	43.0	2.3	10.5	43.0	2.2	A8630133
10.0	43.0	2.2	9.5	43.0	2.1	9.0	43.0	2.0	8.5	43.0	1.6	A8630134
8.0	43.0	1.5	7.5	43.0	1.5	7.0	43.0	2.0	6.5	43.0	2.0	A8630135
6.0	43.0	1.9	5.5	43.0	1.7	5.0	43.0	1.6	4.5	43.0	1.1	A8630136
4.0	43.0	0.6	3.5	43.0	0.3	14.0	43.5	1.0	1..5	43.5	2.0	A8630137
13.0	43.5	2.5	12.5	43.5	2.5	12.0	43.5	2.3	11.5	43.5	2.3	A8630138
11.0	43.5	2.2	10.5	43.5	2.2	10.0	43.5	2.1	9.5	43.5	2.1	A8630139
9.0	43.5	2.0	8.5	43.5	1.6	8.0	43.5	1.3	7.5	43.5	1.2	A8630140
7.0	43.5	1.4	6.5	43.5	1.6	6.0	43.5	1.5	5.5	43.5	1.4	A8630141
5.0	43.5	1.0	4.5	43.5	0.7	4.0	43.5	0.4	..5	43.5	0.2	A8630142
14.0	44.0	0.5	13.5	44.0	1.6	13.0	44.0	2.0	12.5	44.0	1.7	A8630143
12.0	44.0	1.1	11.5	44.0	1.4	11.0	44.0	1.6	10.5	44.0	1.7	A8630144
10.0	44.0	1.6	9.5	44.0	1.6	9.0	44.0	1.5	8.5	44.0	1.2	A8630145
8.0	44.0	0.9	7.5	44.0	0.8	7.0	44.0	0.8	6.5	44.0	0.8	A8630146
6.0	44.0	0.7	5.5	44.0	0.6	5.0	44.0	0.6	4.5	44.0	0.5	A8630147
4.0	44.0	0.4	3.5	44.0	0.2	14.0	44.5	0.2	1..5	44.5	1.2	A8630148
13.0	44.5	1.3	12.5	44.5	0.5	12.0	44.5	0.2	11.5	44.5	0.5	A8630149
11.0	44.5	0.6	10.5	44.5	0.6	10.0	44.5	0.6	9.5	44.5	0.7	A8630150
9.0	44.5	0.7	8.5	44.5	0.6	8.0	44.5	0.6	7.5	44.5	0.5	A8630151
7.0	44.5	0.4	6.5	44.5	0.4	6.0	44.5	0.3	5.5	44.5	0.2	A8630152
5.0	44.5	0.3	4.5	44.5	0.3	4.0	44.5	0.3	..5	44.5	0.2	A8630153
11.5	45.0	0.2	11.0	45.0	0.3	10.5	45.0	0.3	10.0	45.0	0.2	A8630154
9.5	45.0	0.2	9.0	45.0	0.2	8.5	45.0	0.2	8.0	45.0	0.3	A8630155
7.5	45.0	0.2	7.0	45.0	0.3	6.5	45.0	0.4	6.0	45.0	0.5	A8630156
5.5	45.0	0.6	5.0	45.0	0.5	4.5	45.0	0.4	4.0	45.0	0.3	A8630157
3.5	45.0	0.2	11.0	45.5	0.1	9.0	45.5	0.2	7.5	45.5	0.3	A8630158
7.0	45.5	0.5	6.5	45.5	0.6	6.0	45.5	0.7	5.5	45.5	0.7	A8630159
5.0	45.5	0.7	4.5	45.5	0.5	4.0	45.5	0.4	..5	45.5	0.2	A8630160
11.5	46.0	0.3	11.0	46.0	0.3	9.5	46.0	0.8	9.0	46.0	1.0	A8630161
8.5	46.0	1.0	8.0	46.0	0.8	7.5	46.0	0.8	7.0	46.0	0.9	A8630162
6.5	46.0	1.1	6.0	46.0	1.1	5.5	46.0	1.1	5.0	46.0	0.8	A8630163
4.5	46.0	0.6	4.0	46.0	0.4	3.5	46.0	0.2	12.0	46.5	0.8	A8630164
11.5	46.5	1.0	11.0	46.5	0.8	10.5	46.5	0.8	10.0	46.5	1.0	A8630165
9.5	46.5	1.8	9.0	46.5	2.1	8.5	46.5	2.0	8.0	46.5	1.6	A8630166
7.5	46.5	1.7	7.0	46.5	1.7	6.5	46.5	1.6	6.0	46.5	1.4	A8630167
5.5	46.5	1.3	5.0	46.5	1.0	4.5	46.5	0.7	4.0	46.5	0.4	A8630168
3.5	46.5	0.2	14.0	47.0	0.7	13.5	47.0	1.1	1..0	47.0	1.5	A8630169
12.5	47.0	1.8	12.0	47.0	2.0	11.5	47.0	2.0	11.0	47.0	1.4	A8630170

10.5	47.0	1.3	10.0	47.0	1.9	9.5	47.0	2.3	9.0	47.0	2.2	A8630171
8.5	47.0	2.1	8.0	47.0	2.1	7.5	47.0	2.1	7.0	47.0	2.0	A8630172
6.5	47.0	1.7	6.0	47.0	1.5	5.5	47.0	1.2	5.0	47.0	0.9	A8630173
4.5	47.0	0.6	4.0	47.0	0.4	3.5	47.0	0.2	14.5	47.5	1.5	A8630174
14.0	47.5	2.5	13.5	47.5	2.5	13.0	47.5	2.5	12.5	47.5	2.5	A8630175
12.0	47.5	2.5	11.5	47.5	2.5	11.0	47.5	2.0	10.5	47.5	1.7	A8630176
10.0	47.5	2.5	9.5	47.5	2.4	9.0	47.5	2.3	8.5	47.5	2.3	A8630177
8.0	47.5	2.2	7.5	47.5	2.1	7.0	47.5	2.0	6.5	47.5	1.8	A8630178
6.0	47.5	1.5	5.5	47.5	1.2	5.0	47.5	0.8	4.5	47.5	0.6	A8630179
4.0	47.5	0.4	3.5	47.5	0.2	15.5	48.0	1.5	15.0	48.0	2.5	A8630180
14.5	48.0	2.6	14.0	48.0	2.6	13.5	48.0	2.6	1..0	48.0	2.6	A8630181
12.5	48.0	2.6	12.0	48.0	2.6	11.5	48.0	2.5	11.0	48.0	2.0	A8630182
10.5	48.0	2.0	10.0	48.0	2.5	9.5	48.0	2.4	9.0	48.0	2.3	A8630183
8.5	48.0	2.3	8.0	48.0	2.2	7.5	48.0	2.1	7.0	48.0	1.9	A8630184
6.5	48.0	1.7	6.0	48.0	1.4	5.5	48.0	1.2	5.0	48.0	0.8	A8630185
4.5	48.0	0.6	4.0	48.0	0.4	3.5	48.0	0.2	17.0	48.5	0.5	A8630186
16.5	48.5	1.5	16.0	48.5	2.4	15.5	48.5	2.6	15.0	48.5	2.6	A8630187
14.5	48.5	2.6	14.0	48.5	2.6	13.5	48.5	2.6	1..0	48.5	2.6	A8630188
12.5	48.5	2.6	12.0	48.5	2.5	11.5	48.5	2.5	11.0	48.5	2.0	A8630189
10.5	48.5	2.4	10.0	48.5	2.5	9.5	48.5	2.4	9.0	48.5	2.3	A8630190
8.5	48.5	2.3	8.0	48.5	2.2	7.5	48.5	2.1	7.0	48.5	2.0	A8630191
6.5	48.5	1.6	6.0	48.5	1.3	5.5	48.5	1.2	5.0	48.5	0.7	A8630192
4.5	48.5	0.6	4.0	48.5	0.4	3.5	48.5	0.2	..0	48.5	0.1	A8630193
17.5	49.0	0.4	17.0	49.0	2.0	16.5	49.0	2.8	16.0	49.0	2.9	A8630194
15.5	49.0	2.7	15.0	49.0	2.8	14.5	49.0	2.7	14.0	49.0	2.7	A8630195
13.5	49.0	2.7	13.0	49.0	2.6	12.5	49.0	2.6	12.0	49.0	2.5	A8630196
11.5	49.0	2.5	11.0	49.0	2.0	10.5	49.0	2.5	10.0	49.0	2.5	A8630197
9.5	49.0	2.4	9.0	49.0	2.3	8.5	49.0	2.2	8.0	49.0	2.2	A8630198
7.5	49.0	2.1	7.0	49.0	2.0	6.5	49.0	1.6	6.0	49.0	1.3	A8630199
5.5	49.0	1.2	5.0	49.0	0.7	4.5	49.0	0.6	4.0	49.0	0.4	A8630200
3.5	49.0	0.2	3.0	49.0	0.1	17.5	49.5	1.1	17.0	49.5	2.7	A8630201
16.5	49.5	3.0	16.0	49.5	3.0	15.5	49.5	2.8	15.0	49.5	2.7	A8630202
14.5	49.5	2.7	14.0	49.5	2.7	13.5	49.5	2.6	1..0	49.5	2.6	A8630203
12.5	49.5	2.6	12.0	49.5	2.5	11.5	49.5	2.5	11.0	49.5	2.0	A8630204
10.5	49.5	2.0	10.0	49.5	2.4	9.5	49.5	2.3	9.0	49.5	2.2	A8630205
8.5	49.5	2.2	8.0	49.5	2.1	7.5	49.5	1.9	7.0	49.5	1.8	A8630206
6.5	49.5	1.6	6.0	49.5	1.4	5.5	49.5	1.2	5.0	49.5	0.8	A8630207
4.5	49.5	0.6	4.0	49.5	0.4	3.5	49.5	0.2	..0	49.5	0.1	A8630208
17.5	50.0	1.5	17.0	50.0	3.0	16.5	50.0	3.0	16.0	50.0	2.9	A8630209
15.5	50.0	2.8	15.0	50.0	2.8	14.5	50.0	2.7	14.0	50.0	2.7	A8630210
13.5	50.0	2.6	13.0	50.0	2.6	12.5	50.0	2.6	12.0	50.0	2.5	A8630211
11.5	50.0	2.5	11.0	50.0	2.0	10.5	50.0	2.0	90.0	50.0	2.0	A8630212
9.5	50.0	2.0	9.0	50.0	2.0	8.5	50.0	2.0	8.0	50.0	2.0	A8630213
7.5	50.0	2.0	7.0	50.0	1.9	6.5	50.0	1.6	6.0	50.0	1.4	A8630214

5.5	50.0	1.2	5.0	50.0	0.9	4.5	50.0	0.6	4.0	50.0	0.4	A8630215
3.5	50.0	0.2	3.0	50.0	0.1	17.5	50.5	2.0	17.0	50.5	3.0	A8630216
16.5	50.5	3.0	16.0	50.5	2.9	15.5	50.5	2.8	15.0	50.5	2.8	A8630217
14.5	50.5	2.7	14.0	50.5	2.7	13.5	50.5	2.7	1..0	50.5	2.6	A8630218
12.5	50.5	2.6	12.0	50.5	2.6	11.5	50.5	2.6	11.0	50.5	2.3	A8630219
10.5	50.5	2.0	10.0	50.5	2.0	9.5	50.5	2.1	9.0	50.5	2.1	A8630220
8.5	50.5	2.0	8.0	50.5	2.1	7.5	50.5	2.1	7.0	50.5	2.1	A8630221
6.5	50.5	1.9	6.0	50.5	1.4	5.5	50.5	1.3	5.0	50.5	1.0	A8630222
4.5	50.5	0.7	4.0	50.5	0.4	3.5	50.5	0.3	..0	50.5	0.1	A8630223
18.0	51.0	0.5	17.5	51.0	2.5	17.0	51.0	3.0	16.5	51.0	3.0	A8630224
16.0	51.0	2.9	15.5	51.0	2.8	15.0	51.0	2.7	14.5	51.0	2.6	A8630225
14.0	51.0	2.6	13.5	51.0	2.6	13.0	51.0	2.6	12.5	51.0	2.6	A8630226
12.0	51.0	2.5	11.5	51.0	2.5	11.0	51.0	2.1	10.5	51.0	2.0	A8630227
10.0	51.0	2.3	9.5	51.0	2.3	9.0	51.0	2.3	8.5	51.0	2.2	A8630228
8.0	51.0	2.2	7.5	51.0	2.1	7.0	51.0	2.0	6.5	51.0	1.9	A8630229
6.0	51.0	1.5	5.5	51.0	1.3	5.0	51.0	1.2	4.5	51.0	0.8	A8630230
4.0	51.0	0.5	3.5	51.0	0.3	18.0	51.5	0.5	17.5	51.5	2.4	A8630231
17.0	51.5	3.0	16.5	51.5	3.0	16.0	51.5	2.8	15.5	51.5	2.7	A8630232
15.0	51.5	2.7	14.5	51.5	2.6	14.0	51.5	2.5	1..5	51.5	2.5	A8630233
13.0	51.5	2.5	12.5	51.5	2.5	12.0	51.5	2.5	11.5	51.5	2.2	A8630234
11.0	51.5	2.0	10.5	51.5	2.2	10.0	51.5	2.5	9.5	51.5	2.4	A8630235
9.0	51.5	2.3	8.5	51.5	2.2	8.0	51.5	2.3	7.5	51.5	2.1	A8630236
7.0	51.5	2.0	6.5	51.5	1.8	6.0	51.5	1.5	5.5	51.5	1.4	A8630237
5.0	51.5	1.2	4.5	51.5	0.9	4.0	51.5	0.6	..5	51.5	0.3	A8630238
17.5	52.0	1.9	17.0	52.0	2.4	16.5	52.0	2.5	16.0	52.0	2.5	A8630239
15.5	52.0	2.5	15.0	52.0	2.5	14.5	52.0	2.5	14.0	52.0	2.5	A8630240
13.5	52.0	2.4	13.0	52.0	2.5	12.5	52.0	2.5	12.0	52.0	2.5	A8630241
11.5	52.0	2.0	11.0	52.0	2.2	10.5	52.0	2.5	10.0	52.0	2.5	A8630242
9.5	52.0	2.4	9.0	52.0	2.4	8.5	52.0	2.3	8.0	52.0	2.2	A8630243
7.5	52.0	2.2	7.0	52.0	2.1	6.5	52.0	1.8	6.0	52.0	1.5	A8630244
5.5	52.0	1.3	5.0	52.0	1.2	4.5	52.0	0.8	4.0	52.0	0.5	A8630245
3.5	52.0	0.3	17.5	52.5	1.4	17.0	52.5	2.5	16.5	52.5	2.5	A8630246
16.0	52.5	2.5	15.5	52.5	2.4	15.0	52.5	2.3	14.5	52.5	2.0	A8630247
14.0	52.5	2.0	13.5	52.5	2.5	13.0	52.5	2.5	12.5	52.5	2.5	A8630248
12.0	52.5	2.5	11.5	52.5	2.0	11.0	52.5	2.5	10.5	52.5	2.5	A8630249
10.0	52.5	2.5	9.5	52.5	2.4	9.0	52.5	2.3	8.5	52.5	2.3	A8630250
8.0	52.5	2.2	7.5	52.5	2.2	7.0	52.5	2.1	6.5	52.5	1.9	A8630251
6.0	52.5	1.6	5.5	52.5	1.3	5.0	52.5	1.1	4.5	52.5	0.8	A8630252
4.0	52.5	0.4	3.5	52.5	0.2	18.0	53.0	0.8	17.5	53.0	1.0	A8630253
17.0	53.0	1.8	16.5	53.0	2.2	16.0	53.0	2.2	15.5	53.0	2.1	A8630254
15.0	53.0	2.2	14.5	53.0	2.4	14.0	53.0	2.5	1..5	53.0	2.5	A8630255
13.0	53.0	2.5	12.5	53.0	2.5	12.0	53.0	2.0	11.5	53.0	2.0	A8630256
11.0	53.0	2.5	10.5	53.0	2.5	10.0	53.0	2.5	9.5	53.0	2.4	A8630257

9.0	53.0	2.3	8.5	53.0	2.3	8.0	53.0	2.2	7.5	53.0	2.2	A8630258
7.0	53.0	2.1	6.5	53.0	2.0	6.0	53.0	1.8	5.5	53.0	1.3	A8630259
5.0	53.0	1.0	4.5	53.0	0.5	4.0	53.0	0.3	3.5	53.0	0.1	A8630260
18.0	53.5	1.8	17.5	53.5	1.0	17.0	53.5	1.8	16.5	53.5	2.5	A8630261
16.0	53.5	2.5	15.5	53.5	2.5	15.0	53.5	2.6	14.5	53.5	2.5	A8630262
14.0	53.5	2.6	13.5	53.5	2.5	13.0	53.5	2.5	12.5	53.5	2.5	A8630263
12.0	53.5	2.1	11.5	53.5	1.8	11.0	53.5	2.3	10.5	53.5	2.5	A8630264
10.0	53.5	2.5	9.5	53.5	2.4	9.0	53.5	2.3	8.5	53.5	2.2	A8630265
8.0	53.5	2.1	7.5	53.5	2.0	7.0	53.5	1.9	6.5	53.5	1.6	A8630266
6.0	53.5	1.2	5.5	53.5	0.8	5.0	53.5	0.9	4.5	53.5	0.5	A8630267
4.0	53.5	0.3	17.5	54.0	0.4	17.0	54.0	2.3	16.5	54.0	2.5	A8630268
16.0	54.0	2.5	15.5	54.0	2.5	15.0	54.0	2.5	14.5	54.0	2.5	A8630269
14.0	54.0	2.5	13.5	54.0	2.5	13.0	54.0	2.5	12.5	54.0	2.5	A8630270
12.0	54.0	2.0	11.5	54.0	1.7	11.0	54.0	1.9	10.5	54.0	2.1	A8630271
10.0	54.0	2.3	9.5	54.0	2.2	9.0	54.0	2.1	8.5	54.0	2.0	A8630272
8.0	54.0	1.8	7.5	54.0	1.5	7.0	54.0	1.0	6.5	54.0	0.9	A8630273
6.0	54.0	0.7	5.5	54.0	0.4	5.0	54.0	0.1	4.5	54.0	0.1	A8630274
17.0	54.5	1.5	16.5	54.5	2.0	16.0	54.5	2.5	15.5	54.5	2.5	A8630275
15.0	54.5	2.5	14.5	54.5	2.5	14.0	54.5	2.0	13.5	54.5	1.8	A8630276
13.0	54.5	1.8	12.5	54.5	1.4	12.0	54.5	1.5	11.5	54.5	1.6	A8630277
11.0	54.5	1.5	10.5	54.5	1.4	10.0	54.5	1.4	9.5	54.5	1.4	A8630278
9.0	54.5	1.2	8.5	54.5	1.0	8.0	54.5	1.1	7.5	54.5	1.0	A8630279
7.0	54.5	0.3	6.5	54.5	0.3	6.0	54.5	0.3	15.5	55.0	1.5	A8630280
15.0	55.0	1.5	14.5	55.0	1.0	14.0	55.0	1.3	13.5	55.0	0.9	A8630281
13.0	55.0	0.5	12.0	55.0	1.1	11.5	55.0	1.0	11.0	55.0	0.6	A8630282
10.5	55.0	0.5	10.0	55.0	0.7	9.5	55.0	0.7	9.0	55.0	0.2	A8630283
8.0	55.0	0.3	7.5	55.0	0.3	11.0	55.5	0.5	10.5	55.5	0.2	A8630284
6.5	63.5	0.1	6.0	63.5	0.1	5.5	63.5	0.1	5.0	63.5	0.1	A8630285
4.0	63.5	0.1	6.5	64.0	0.4	6.0	64.0	0.3	5.5	64.0	0.3	A8630286
5.0	64.0	0.4	4.5	64.0	0.4	4.0	64.0	0.5	3.5	64.0	0.4	A8630287
7.0	64.5	0.8	6.5	64.5	0.9	6.0	64.5	0.6	5.5	64.5	0.6	A8630288
5.0	64.5	0.7	4.5	64.5	1.0	4.0	64.5	1.0	3.5	64.5	0.5	A8630289
7.0	65.0	0.5	6.5	65.0	1.5	6.0	65.0	1.3	5.5	65.0	1.4	A8630290
5.0	65.0	1.5	4.5	65.0	1.5	4.0	65.0	1.2	3.5	65.0	0.4	A8630291
7.0	65.5	0.5	6.5	65.5	1.5	6.0	65.5	1.5	5.5	65.5	1.5	A8630292
5.0	65.5	1.5	4.5	65.5	1.5	4.0	65.5	1.3	3.5	65.5	0.5	A8630293
7.0	66.0	0.5	6.5	66.0	1.4	6.0	66.0	1.4	5.5	66.0	1.3	A8630294
5.0	66.0	1.3	4.5	66.0	1.5	4.0	66.0	1.4	3.5	66.0	0.5	A8630295
7.0	66.5	0.5	6.5	66.5	0.6	6.0	66.5	0.5	5.5	66.5	0.5	A8630296
5.0	66.5	0.5	4.5	66.5	0.5	4.0	66.5	0.7	3.5	66.5	0.4	A8630297
7.0	67.0	0.2	6.5	67.0	0.3	6.0	67.0	0.2	5.5	67.0	0.1	A8630298
5.0	67.0	0.2	4.5	67.0	0.2	4.0	67.0	0.2	3.5	67.0	0.1	A8630299
6.5	72.5	0.5	6.0	72.5	1.0	5.5	72.5	1.0	5.0	72.5	1.0	A8630300
4.5	72.5	1.0	4.0	72.5	0.6	6.5	73.0	0.5	6.0	73.0	1.5	A8630301

5.5	73.0	1.4	5.0	73.0	1.3	4.5	73.0	1.5	4.0	73.0	1.0	A8630302
5.5	77.0	0.5	5.0	77.0	0.4	4.5	77.0	0.6	4.0	77.0	0.6	A8630303
6.0	77.5	0.5	5.5	77.5	1.5	5.0	77.5	1.5	4.5	77.5	1.5	A8630304
4.0	77.5	1.1	5.5	78.0	0.4	5.0	78.0	0.5	4.5	78.0	0.4	A8630305
4.0	78.0	0.5	4.0	81.5	0.1	7.0	82.0	0.4	6.5	82.0	0.6	A8630306
6.0	82.0	0.5	5.5	82.0	0.1	5.0	82.0	0.4	4.5	82.0	0.5	A8630307
4.0	82.0	0.5	3.5	82.0	0.2	7.5	82.5	0.5	7.0	82.5	1.4	A8630308
6.5	82.5	1.5	6.0	82.5	1.4	5.5	82.5	1.2	5.0	82.5	1.2	A8630309
4.5	82.5	0.9	4.0	82.5	0.6	3.5	82.5	0.3	9.0	83.0	0.5	A8630310
8.5	83.0	1.5	8.0	83.0	1.6	7.5	83.0	1.8	7.0	83.0	2.0	A8630311
6.5	83.0	2.0	6.0	83.0	2.0	5.5	83.0	1.6	5.0	83.0	1.3	A8630312
4.5	83.0	1.0	4.0	83.0	0.8	3.5	83.0	0.3	9.0	83.5	1.8	A8630313
8.5	83.5	2.3	8.0	83.5	2.5	7.5	83.5	2.4	7.0	83.5	2.3	A8630314
6.5	83.5	2.2	6.0	83.5	2.0	5.5	83.5	1.6	5.0	83.5	0.7	A8630315
4.5	83.5	0.9	4.0	83.5	0.6	3.5	83.5	0.3	10.0	84.0	0.5	A8630316
9.5	84.0	1.5	9.0	84.0	2.4	8.5	84.0	2.5	8.0	84.0	2.5	A8630317
7.5	84.0	2.4	7.0	84.0	2.2	6.5	84.0	2.1	6.0	84.0	1.8	A8630318
5.5	84.0	1.5	5.0	84.0	1.2	4.5	84.0	0.9	4.0	84.0	0.6	A8630319
3.5	84.0	0.3	10.0	84.5	1.0	9.5	84.5	2.4	9.0	84.5	2.5	A8630320
8.5	84.5	2.5	8.0	84.5	2.4	7.5	84.5	2.3	7.0	84.5	2.2	A8630321
6.5	84.5	2.1	6.0	84.5	1.8	5.5	84.5	1.5	5.0	84.5	1.2	A8630322
4.5	84.5	0.9	4.0	84.5	0.6	3.5	84.5	0.3	10.0	85.0	2.1	A8630323
9.5	85.0	2.5	9.0	85.0	2.5	8.5	85.0	2.5	8.0	85.0	2.3	A8630324
7.5	85.0	2.2	7.0	85.0	2.2	6.5	85.0	2.1	6.0	85.0	2.0	A8630325
5.5	85.0	1.6	5.0	85.0	1.3	4.5	85.0	1.0	4.0	85.0	0.6	A8630326
3.5	85.0	0.3	10.5	85.5	1.4	10.0	85.5	2.5	9.5	85.5	2.5	A8630327
9.0	85.5	2.5	8.5	85.5	2.4	8.0	85.5	2.2	7.5	85.5	2.2	A8630328
7.0	85.5	2.2	6.5	85.5	2.1	6.0	85.5	2.0	5.5	85.5	1.6	A8630329
5.0	85.5	1.2	4.5	85.5	1.0	4.0	85.5	0.6	3.5	85.5	0.4	A8630330
11.0	86.0	.5	10.5	86.0	1.8	10.0	86.0	2.3	9.5	86.0	2.1	A8630331
9.0	86.0	2.1	8.5	86.0	1.9	8.0	86.0	1.6	7.5	86.0	1.6	A8630332
7.0	86.0	1.7	6.5	86.0	1.7	6.0	86.0	1.6	5.5	86.0	1.4	A8630333
5.0	86.0	1.2	4.5	86.0	0.8	4.0	86.0	0.5	3.5	86.0	0.2	A8630334
10.0	86.5	0.3	9.5	86.5	0.9	9.0	86.5	1.0	8.5	86.5	1.0	A8630335
8.0	86.5	0.8	7.5	86.5	0.7	7.0	86.5	0.8	6.5	86.5	1.0	A8630336
6.0	86.5	1.0	5.5	86.5	0.9	5.0	86.5	0.7	4.5	86.5	0.5	A8630337
4.0	86.5	0.3	3.5	86.5	0.1	9.5	87.0	0.2	9.0	87.0	0.4	A8630338
8.5	87.0	0.4	8.0	87.0	0.5	7.5	87.0	0.5	7.0	87.0	0.5	A8630339
6.5	87.0	0.4	6.0	87.0	0.5	5.5	87.0	0.3	5.0	87.0	0.3	A8630340
4.5	87.0	0.2	4.0	87.0	0.1	10.5	87.5	0.1	10.0	87.5	0.2	A8630341
9.5	87.5	0.3	9.0	87.5	0.4	8.5	87.5	0.5	8.0	87.5	0.8	A8630342
7.5	87.5	0.7	7.0	87.5	0.6	6.5	87.5	0.4	6.0	87.5	0.1	A8630343
11.5	88.0	0.5	11.0	88.0	0.4	10.5	88.0	0.4	10.0	88.0	0.4	A8630344

9.5	88.0	0.6	9.0	88.0	0.6	8.5	88.0	0.5	8.0	88.0	1.0	A8630345
7.5	88.0	1.0	7.0	88.0	0.9	6.5	88.0	0.5	6.0	88.0	0.1	A8630346
12.0	88.5	0.1	11.5	88.5	0.6	11.0	88.5	1.0	10.5	88.5	1.0	A8630347
10.0	88.5	1.0	9.5	88.5	1.0	9.0	88.5	0.8	8.5	88.5	0.5	A8630348
8.0	88.5	0.8	7.5	88.5	0.9	7.0	88.5	1.0	6.5	88.5	0.8	A8630349
6.0	88.5	0.5	5.5	88.5	0.1	12.0	89.0	0.3	11.5	89.0	0.6	A8630350
11.0	89.0	0.5	10.5	89.0	0.5	10.0	89.0	0.5	9.5	89.0	0.5	A8630351
9.0	89.0	0.5	8.5	89.0	0.5	8.0	89.0	0.5	7.5	89.0	0.5	A8630352
7.0	89.0	0.5	6.5	89.0	0.5	6.0	89.0	0.5	5.5	89.0	0.4	A8630353
5.0	89.0	0.2	4.5	89.0	0.2	4.0	89.0	0.2	12.0	89.5	0.3	A8630354
11.5	89.5	0.5	11.0	89.5	0.5	10.5	89.5	0.5	10.0	89.5	0.5	A8630355
9.5	89.5	0.5	9.0	89.5	0.5	8.5	89.5	0.5	8.0	89.5	0.5	A8630356
7.5	89.5	0.5	7.0	89.5	0.5	6.5	89.5	0.6	6.0	89.5	0.8	A8630357
5.5	89.5	0.8	5.0	89.5	0.5	4.5	89.5	0.4	4.0	89.5	0.3	A8630358
3.5	89.5	0.2	12.0	90.0	0.3	11.5	90.0	0.4	11.0	90.0	0.5	A8630359
10.5	90.0	0.5	10.0	90.0	0.5	9.5	90.0	0.5	9.0	90.0	0.5	A8630360
8.5	90.0	0.5	8.0	90.0	0.7	7.5	90.0	1.1	7.0	90.0	1.4	A8630361
6.5	90.0	1.7	6.0	90.0	1.7	5.5	90.0	1.6	5.0	90.0	1.2	A8630362
4.5	90.0	0.8	4.0	90.0	0.6	3.5	90.0	0.2	1..0	90.5	0.8	A8630363
12.5	90.5	1.2	12.0	90.5	1.4	11.5	90.5	1.8	11.0	90.5	2.0	A8630364
10.5	90.5	2.0	10.0	90.5	2.0	9.5	90.5	1.9	9.0	90.5	1.6	A8630365
8.5	90.5	1.3	8.0	90.5	1.5	7.5	90.5	2.0	7.0	90.5	2.0	A8630366
6.5	90.5	2.0	6.0	90.5	1.9	5.5	90.5	1.7	5.0	90.5	1.5	A8630367
4.5	90.5	0.8	4.0	90.5	0.6	3.5	90.5	0.3	1..5	91.0	1.1	A8630368
13.0	91.0	1.7	12.5	91.0	1.6	12.0	91.0	1.6	11.5	91.0	1.7	A8630369
11.0	91.0	2.0	10.5	91.0	1.0	10.0	91.0	0.9	9.5	91.0	1.0	A8630370
9.0	91.0	1.2	8.5	91.0	1.3	8.0	91.0	2.0	7.5	91.0	2.0	A8630371
7.0	91.0	2.0	6.5	91.0	2.0	6.0	91.0	1.9	5.5	91.0	1.7	A8630372
5.0	91.0	1.5	4.5	91.0	0.8	4.0	91.0	0.6	..5	91.0	0.3	A8630373
14.5	91.5	0.5	14.0	91.5	1.7	13.5	91.5	2.0	1..0	91.5	1.8	A8630374
12.5	91.5	1.6	12.0	91.5	1.4	11.5	91.5	0.7	11.0	91.5	0.5	A8630375
10.5	91.5	0.5	10.0	91.5	0.5	9.5	91.5	0.5	9.0	91.5	0.6	A8630376
8.5	91.5	1.1	8.0	91.5	2.0	7.5	91.5	2.0	7.0	91.5	2.0	A8630377
6.5	91.5	2.0	6.0	91.5	1.8	5.5	91.5	1.6	5.0	91.5	1.2	A8630378
4.5	91.5	0.8	4.0	91.5	0.6	3.5	91.5	0.3	15.0	92.0	0.1	A8630379
14.5	92.0	1.7	14.0	92.0	2.5	13.5	92.0	2.2	1..0	92.0	1.8	A8630380
12.5	92.0	1.6	12.0	92.0	1.3	11.5	92.0	1.0	11.0	92.0	0.8	A8630381
10.5	92.0	0.6	10.0	92.0	0.5	9.5	92.0	0.5	9.0	92.0	0.7	A8630382
8.5	92.0	1.2	8.0	92.0	2.0	7.5	92.0	2.0	7.0	92.0	2.0	A8630383
6.5	92.0	2.0	6.0	92.0	1.8	5.5	92.0	1.6	5.0	92.0	1.2	A8630384
4.5	92.0	0.8	4.0	92.0	0.6	3.5	92.0	0.3	15.0	92.5	1.0	A8630385
14.5	92.5	2.5	14.0	92.5	2.5	13.5	92.5	2.2	1..0	92.5	1.8	A8630386
12.5	92.5	1.6	12.0	92.5	1.1	11.5	92.5	1.0	11.0	92.5	1.0	A8630387
10.5	92.5	1.0	10.0	92.5	1.0	9.5	92.5	1.0	9.0	92.5	1.0	A8630388

8.5	92.5	1.5	8.0	92.5	2.0	7.5	92.5	2.0	7.0	92.5	2.0	A8630389
6.5	92.5	2.0	6.0	92.5	1.8	5.5	92.5	1.6	5.0	92.5	1.2	A8630390
4.5	92.5	0.8	4.0	92.5	0.6	3.5	92.5	0.3	15.0	93.0	1.0	A8630391
14.5	93.0	2.5	14.0	93.0	2.5	13.5	93.0	2.1	1..0	93.0	1.7	A8630392
12.5	93.0	1.6	12.0	93.0	1.2	11.5	93.0	1.0	11.0	93.0	1.0	A8630393
10.5	93.0	1.0	10.0	93.0	1.0	9.5	93.0	1.0	9.0	93.0	1.2	A8630394
8.5	93.0	2.0	8.0	93.0	2.0	7.5	93.0	2.0	7.0	93.0	2.0	A8630395
6.5	93.0	2.0	6.0	93.0	1.8	5.5	93.0	1.6	5.0	93.0	1.3	A8630396
4.5	93.0	0.8	4.0	93.0	0.6	3.5	93.0	0.2	15.0	93.5	1.0	A8630397
14.5	93.5	2.5	14.0	93.5	2.5	13.5	93.5	2.0	1..0	93.5	1.8	A8630398
12.5	93.5	1.6	12.0	93.5	1.0	11.5	93.5	0.5	11.0	93.5	0.5	A8630399
10.5	93.5	0.5	10.0	93.5	0.5	9.5	93.5	0.6	9.0	93.5	1.2	A8630400
8.5	93.5	2.0	8.0	93.5	2.0	7.5	93.5	2.0	7.0	93.5	2.0	A8630401
6.5	93.5	2.0	6.0	93.5	1.8	5.5	93.5	1.7	5.0	93.5	1.5	A8630402
4.5	93.5	1.0	4.0	93.5	0.6	3.5	93.5	0.2	15.0	94.0	1.6	A8630403
14.5	94.0	2.5	14.0	94.0	2.5	13.5	94.0	2.1	1..0	94.0	1.8	A8630404
12.5	94.0	1.6	12.0	94.0	1.2	11.5	94.0	0.8	11.0	94.0	0.8	A8630405
10.5	94.0	0.9	10.0	94.0	0.8	9.5	94.0	0.7	9.0	94.0	1.1	A8630406
8.5	94.0	1.5	8.0	94.0	2.0	7.5	94.0	2.0	7.0	94.0	2.0	A8630407
6.5	94.0	2.0	6.0	94.0	1.9	5.5	94.0	1.7	5.0	94.0	1.6	A8630408
4.5	94.0	1.2	4.0	94.0	0.6	3.5	94.0	0.3	15.0	94.5	0.9	A8630409
14.5	94.5	2.4	14.0	94.5	2.5	13.5	94.5	2.2	1..0	94.5	1.8	A8630410
12.5	94.5	1.6	12.0	94.5	1.4	11.5	94.5	1.0	11.0	94.5	1.0	A8630411
10.5	94.5	1.0	10.0	94.5	1.0	9.5	94.5	1.0	9.0	94.5	1.2	A8630412
8.5	94.5	1.3	8.0	94.5	1.5	7.5	94.5	2.0	7.0	94.5	2.0	A8630413
6.5	94.5	2.0	6.0	94.5	1.9	5.5	94.5	1.8	5.0	94.5	1.6	A8630414
4.5	94.5	1.3	4.0	94.5	0.7	3.5	94.5	0.3	14.5	95.0	1.6	A8630415
14.0	95.0	2.5	13.5	95.0	2.5	13.0	95.0	2.0	12.5	95.0	1.7	A8630416
12.0	95.0	1.4	11.5	95.0	1.1	11.0	95.0	0.5	10.5	95.0	0.4	A8630417
10.0	95.0	0.4	9.5	95.0	0.5	9.0	95.0	0.6	8.5	95.0	0.7	A8630418
8.0	95.0	1.1	7.5	95.0	1.5	7.0	95.0	1.8	6.5	95.0	1.9	A8630419
6.0	95.0	1.8	5.5	95.0	1.7	5.0	95.0	1.6	4.5	95.0	1.4	A8630420
4.0	95.0	0.8	3.5	95.0	0.4	14.5	95.5	0.4	14.0	95.5	1.6	A8630421
13.5	95.5	2.2	13.0	95.5	2.2	12.5	95.5	1.6	12.0	95.5	1.0	A8630422
11.5	95.5	0.2	8.5	95.5	0.2	8.0	95.5	0.5	7.5	95.5	1.0	A8630423
7.0	95.5	1.4	6.5	95.5	1.7	6.0	95.5	1.6	5.5	95.5	1.6	A8630424
5.0	95.5	1.5	4.5	95.5	1.1	4.0	95.5	0.8	..5	95.5	0.4	A8630425
14.0	96.0	0.5	13.5	96.0	1.2	13.0	96.0	1.5	12.5	96.0	1.1	A8630426
6.0	88.5	0.5	5.5	88.5	0.1	12.0	89.0	0.3	11.5	89.0	0.6	A8630350
12.0	96.0	0.2	11.0	96.0	0.6	10.5	96.0	0.7	10.0	96.0	0.6	A8630427
9.5	96.0	0.5	9.0	96.0	0.2	7.5	96.0	0.3	7.0	96.0	0.8	A8630428
6.5	96.0	1.1	6.0	96.0	1.2	5.5	96.0	1.1	5.0	96.0	1.0	A8630429
4.5	96.0	0.8	4.0	96.0	0.6	3.5	96.0	0.4	1..5	96.5	0.4	A8630430

13.0	96.5	0.9	12.5	96.5	0.3	11.5	96.5	0.9	11.0	96.5	1.4	A8630431
10.5	96.5	1.4	10.0	96.5	1.2	9.5	96.5	1.0	9.0	96.5	0.8	A8630432
8.5	96.5	0.6	8.0	96.5	0.2	7.0	96.5	0.3	6.5	96.5	0.6	A8630433
6.0	96.5	0.7	5.5	96.5	0.6	5.0	96.5	0.4	4.5	96.5	0.4	A8630434
4.0	96.5	0.4	3.5	96.5	0.2	13.5	97.0	0.2	1..0	97.0	0.1	A8630435
12.0	97.0	0.5	11.5	97.0	1.9	11.0	97.0	2.5	10.5	97.0	2.2	A8630436
10.0	97.0	1.8	9.5	97.0	1.6	9.0	97.0	1.1	8.5	97.0	0.7	A8630437
8.0	97.0	0.5	6.5	97.0	0.3	6.0	97.0	0.3	5.5	97.0	0.2	A8630438
4.5	97.0	0.1	4.0	97.0	0.2	3.5	97.0	0.1	12.0	97.5	1.5	A8630439
11.5	97.5	2.5	11.0	97.5	2.5	10.5	97.5	2.3	10.0	97.5	1.8	A8630440
9.5	97.5	1.6	9.0	97.5	1.2	8.5	97.5	0.8	8.0	97.5	0.6	A8630441
7.5	97.5	0.3	12.0	98.0	1.0	11.5	98.0	2.1	11.0	98.0	2.4	A8630442
10.5	98.0	2.4	10.0	98.0	1.9	9.5	98.0	1.6	9.0	98.0	1.3	A8630443
8.5	98.0	0.9	8.0	98.0	0.6	7.5	98.0	0.2	11.5	98.5	0.8	A8630444
11.0	98.5	1.6	10.5	98.5	2.3	10.0	98.5	1.9	9.5	98.5	1.4	A8630445
9.0	98.5	1.0	8.5	98.5	0.7	8.0	98.5	0.5	11.0	99.0	1.0	A8630446
10.5	99.0	2.1	10.0	99.0	1.5	9.5	99.0	0.5	9.0	99.0	0.4	A8630447
8.5	99.0	0.4	8.0	99.0	0.1	10.5	99.5	0.8	10.0	99.5	0.3	A8630448
3.5	102.5	0.1	6.0	103.0	0.2	5.5	103.0	0.2	5.0	103.0	0.3	A8630449
4.5	103.0	0.3	4.0	103.0	0.3	3.5	103.0	0.3	9.0	103.5	0.2	A8630450
8.5	103.5	0.2	8.0	103.5	0.1	6.5	103.5	0.4	6.0	103.5	0.5	A8630451
5.5	103.5	0.5	5.0	103.5	0.6	4.5	103.5	0.6	4.0	103.5	0.6	A8630452
3.5	103.5	0.5	14.5	104.0	0.1	14.0	104.0	0.7	1..5	104.0	0.8	A8630453
13.0	104.0	0.8	12.5	104.0	0.7	12.0	104.0	0.8	11.5	104.0	0.9	A8630454
11.0	104.0	1.4	10.5	104.0	1.5	10.0	104.0	1.5	9.5	104.0	1.5	A8630455
9.0	104.0	1.4	8.5	104.0	1.3	8.0	104.0	1.0	7.5	104.0	0.6	A8630456
7.0	104.0	0.6	6.5	104.0	0.6	6.0	104.0	0.6	5.5	104.0	0.6	A8630457
5.0	104.0	0.5	4.5	104.0	0.5	4.0	104.0	0.5	..5	104.0	0.3	A8630458
15.0	104.5	0.5	14.5	104.5	1.0	14.0	104.5	1.2	1..5	104.5	1.3	A8630459
13.0	104.5	1.4	12.5	104.5	1.4	12.0	104.5	1.4	11.5	104.5	2.0	A8630460
11.0	104.5	2.5	10.5	104.5	2.5	10.0	104.5	2.5	9.5	104.5	2.4	A8630461
9.0	104.5	2.3	8.5	104.5	2.2	8.0	104.5	1.9	7.5	104.5	1.0	A8630462
7.0	104.5	0.6	6.5	104.5	0.5	6.0	104.5	0.5	5.5	104.5	0.4	A8630463
5.0	104.5	0.4	4.5	104.5	0.3	4.0	104.5	0.3	..5	104.5	0.2	A8630464
16.0	105.0	1.0	15.5	105.0	1.6	15.0	105.0	1.8	14.5	105.0	2.1	A8630465
14.0	105.0	2.2	13.5	105.0	2.3	13.0	105.0	2.4	12.5	105.0	2.3	A8630466
12.0	105.0	2.1	11.5	105.0	2.0	11.0	105.0	2.5	10.5	105.0	2.5	A8630467
10.0	105.0	2.5	9.5	105.0	2.4	9.0	105.0	2.3	8.5	105.0	2.2	A8630468
8.0	105.0	2.1	7.5	105.0	1.3	7.0	105.0	0.7	6.5	105.0	0.5	A8630469
6.0	105.0	0.5	5.5	105.0	0.5	5.0	105.0	0.5	4.5	105.0	0.5	A8630470
4.0	105.0	0.5	3.5	105.0	0.3	16.5	105.5	1.0	16.0	105.5	2.2	A8630471
15.5	105.5	2.5	15.0	105.5	2.5	14.5	105.5	2.5	14.0	105.5	2.5	A8630472
13.5	105.5	2.5	13.0	105.5	2.5	12.5	105.5	2.5	12.0	105.5	2.5	A8630473
11.5	105.5	2.1	11.0	105.5	2.0	10.5	105.5	2.2	10.0	105.5	2.1	A8630474

9.5	105.5	2.0	9.0	105.5	2.1	8.5	105.5	2.1	8.0	105.5	2.0	A8630475
7.5	105.5	1.4	7.0	105.5	0.6	6.5	105.5	0.5	6.0	105.5	0.5	A8630476
5.5	105.5	0.5	5.0	105.5	0.5	4.5	105.5	0.5	4.0	105.5	0.5	A8630477
3.5	105.5	0.4	16.5	106.0	1.3	16.0	106.0	1.7	15.5	106.0	1.5	A8630478
15.0	106.0	1.5	14.5	106.0	1.7	14.0	106.0	2.5	1..5	106.0	2.5	A8630479
13.0	106.0	2.5	12.5	106.0	2.5	12.0	106.0	2.5	11.5	106.0	2.2	A8630480
11.0	106.0	2.0	10.5	106.0	2.0	10.0	106.0	2.0	9.5	106.0	2.0	A8630481
9.0	106.0	2.0	8.5	106.0	2.0	8.0	106.0	2.0	7.5	106.0	1.6	A8630482
7.0	106.0	0.7	6.5	106.0	0.5	6.0	106.0	0.5	5.5	106.0	0.5	A8630483
5.0	106.0	0.4	4.5	106.0	0.3	4.0	106.0	0.3	..5	106.0	0.2	A8630484
3.0	106.0	0.1	16.5	106.5	1.2	16.0	106.5	1.9	15.5	106.5	2.0	A8630485
15.0	106.5	2.5	14.5	106.5	2.5	14.0	106.5	2.5	1..5	106.5	2.5	A8630486
13.0	106.5	2.5	12.5	106.5	2.5	12.0	106.5	2.4	11.5	106.5	2.0	A8630487
11.0	106.5	2.0	10.5	106.5	2.5	10.0	106.5	2.5	9.5	106.5	2.5	A8630488
9.0	106.5	2.3	8.5	106.5	2.2	8.0	106.5	2.1	7.5	106.5	2.0	A8630489
7.0	106.5	1.3	6.5	106.5	1.0	6.0	106.5	0.9	5.5	106.5	0.8	A8630490
5.0	106.5	0.9	4.5	106.5	0.7	4.0	106.5	0.6	..5	106.5	0.3	A8630491
3.0	106.5	0.1	17.0	107.0	1.0	16.5	107.0	2.5	16.0	107.0	2.5	A8630492
15.5	107.0	2.5	15.0	107.0	2.5	14.5	107.0	2.5	14.0	107.0	2.5	A8630493
13.5	107.0	2.4	13.0	107.0	2.3	12.5	107.0	2.2	12.0	107.0	2.0	A8630494
11.5	107.0	2.0	11.0	107.0	2.5	10.5	107.0	2.5	10.0	107.0	2.5	A8630495
9.5	107.0	2.5	9.0	107.0	2.3	8.5	107.0	2.2	8.0	107.0	2.1	A8630496
7.5	107.0	2.0	7.0	107.0	1.5	6.5	107.0	1.0	6.0	107.0	0.5	A8630497
5.5	107.0	0.5	5.0	107.0	0.5	4.5	107.0	0.5	4.0	107.0	0.5	A8630498
3.5	107.0	0.3	17.0	107.5	1.5	16.5	107.5	2.5	16.0	107.5	2.5	A8630499
15.5	107.5	2.5	15.0	107.5	2.5	14.5	107.5	2.5	14.0	107.5	2.5	A8630500
13.5	107.5	2.5	13.0	107.5	2.5	12.5	107.5	2.2	12.0	107.5	2.0	A8630501
11.5	107.5	2.0	11.0	107.5	2.5	10.5	107.5	2.5	10.0	107.5	2.5	A8630502
9.5	107.5	2.4	9.0	107.5	2.3	8.5	107.5	2.2	8.0	107.5	2.1	A8630503
7.5	107.5	2.0	7.0	107.5	1.7	6.5	107.5	1.5	6.0	107.5	1.1	A8630504
5.5	107.5	1.1	5.0	107.5	1.1	4.5	107.5	1.0	4.0	107.5	0.8	A8630505
3.5	107.5	0.6	17.5	108.0	0.4	17.0	108.0	2.2	16.5	108.0	2.5	A8630506
16.0	108.0	2.5	15.5	108.0	2.5	15.0	108.0	2.5	14.5	108.0	2.5	A8630507
14.0	108.0	2.5	13.5	108.0	2.5	13.0	108.0	2.5	12.5	108.0	2.5	A8630508
12.0	108.0	2.3	11.5	108.0	2.0	11.0	108.0	2.3	10.5	108.0	2.5	A8630509
10.0	108.0	2.5	9.5	108.0	2.4	9.0	108.0	2.3	8.5	108.0	2.2	A8630510
8.0	108.0	2.1	7.5	108.0	2.0	7.0	108.0	1.7	6.5	108.0	1.5	A8630511
6.0	108.0	1.4	5.5	108.0	1.3	5.0	108.0	1.2	4.5	108.0	1.1	A8630512
4.0	108.0	0.8	3.5	108.0	0.6	17.5	108.5	0.6	17.0	108.5	2.4	A8630513
16.5	108.5	2.5	16.0	108.5	2.5	15.5	108.5	2.5	15.0	108.5	2.5	A8630514
14.5	108.5	2.5	14.0	108.5	2.5	13.5	108.5	2.5	1..0	108.5	2.5	A8630515
12.5	108.5	2.5	12.0	108.5	2.3	11.5	108.5	2.1	11.0	108.5	1.8	A8630516
10.5	108.5	2.3	10.0	108.5	2.5	9.5	108.5	2.4	9.0	108.5	2.3	A8630517

8.5	108.5	2.2	8.0	108.5	2.1	7.5	108.5	1.9	7.0	108.5	1.6	A8630518
6.5	108.5	1.0	6.0	108.5	0.6	5.5	108.5	0.5	5.0	108.5	0.5	A8630519
4.5	108.5	0.5	4.0	108.5	0.7	3.5	108.5	0.5	17.5	109.0	0.2	A8630520
17.0	109.0	1.9	16.5	109.0	2.5	16.0	109.0	2.5	15.5	109.0	2.5	A8630521
15.0	109.0	2.5	14.5	109.0	2.5	14.0	109.0	2.5	1..5	109.0	2.5	A8630522
13.0	109.0	2.5	12.5	109.0	2.0	12.0	109.0	2.2	11.5	109.0	1.9	A8630523
11.0	109.0	1.6	10.5	109.0	1.5	10.0	109.0	1.6	9.5	109.0	1.5	A8630524
9.0	109.0	1.6	8.5	109.0	1.6	8.0	109.0	1.5	7.5	109.0	1.4	A8630525
7.0	109.0	0.9	6.5	109.0	0.6	6.0	109.0	0.5	5.5	109.0	0.5	A8630526
5.0	109.0	0.5	4.5	109.0	0.5	4.0	109.0	0.5	..5	109.0	0.3	A8630527
17.0	109.5	0.9	16.5	109.5	1.5	16.0	109.5	1.7	15.5	109.5	1.5	A8630528
15.0	109.5	1.5	14.5	109.5	1.7	14.0	109.5	1.9	1..5	109.5	2.0	A8630529
13.0	109.5	2.0	12.5	109.5	1.8	12.0	109.5	1.6	11.5	109.5	1.1	A8630530
11.0	109.5	0.6	10.5	109.5	0.9	10.0	109.5	0.9	9.5	109.5	0.5	A8630531
9.0	109.5	1.0	8.5	109.5	1.0	8.0	109.5	0.8	7.5	109.5	0.5	A8630532
7.0	109.5	0.4	6.5	109.5	0.3	5.5	109.5	0.3	5.0	109.5	0.4	A8630533
4.5	109.5	0.1	4.0	109.5	0.2	3.5	109.5	0.2	14.5	110.0	0.2	A8630534
14.0	110.0	1.0	13.5	110.0	1.3	13.0	110.0	1.4	12.5	110.0	1.2	A8630535
12.0	110.0	0.9	8.5	110.0	0.2	16.5	110.5	0.5	16.0	110.5	0.5	A8630536
15.5	110.5	0.5	15.0	110.5	0.4	14.5	110.5	0.2	1..5	110.5	0.8	A8630537
13.0	110.5	0.7	12.5	110.5	0.5	16.0	111.0	0.2	15.5	111.0	0.2	A8630538
15.0	111.0	0.2	14.5	111.0	0.2	14.0	111.0	0.1	1..0	111.0	0.2	A8630539
5.0	111.5	0.2	4.5	111.5	0.1	6.5	112.0	1.5	6.0	112.0	1.1	A8630540
5.5	112.0	1.0	5.0	112.0	1.0	4.5	112.0	1.0	4.0	112.0	0.8	A8630541
3.5	112.0	0.5	7.0	112.5	0.7	6.5	112.5	2.0	6.0	112.5	1.8	A8630542
5.5	112.5	1.6	5.0	112.5	1.6	4.5	112.5	1.5	4.0	112.5	1.1	A8630543
3.5	112.5	0.6	7.5	113.0	0.2	7.0	113.0	1.9	6.5	113.0	2.0	A8630544
6.0	113.0	1.8	5.5	113.0	1.7	5.0	113.0	1.6	4.5	113.0	1.4	A8630545
4.0	113.0	1.0	3.5	113.0	0.5	7.5	113.5	1.5	7.0	113.5	2.0	A8630546
6.5	113.5	2.0	6.0	113.5	1.8	5.5	113.5	1.6	5.0	113.5	1.5	A8630547
4.5	113.5	1.2	4.0	113.5	0.8	3.5	113.5	0.4	7.5	114.0	1.0	A8630548
7.0	114.0	2.0	6.5	114.0	2.0	6.0	114.0	1.8	5.5	114.0	1.7	A8630549
5.0	114.0	1.6	4.5	114.0	1.5	4.0	114.0	1.0	..5	114.0	0.5	A8630550
7.5	114.5	0.2	7.0	114.5	1.5	6.5	114.5	2.0	6.0	114.5	1.8	A8630551
5.5	114.5	1.6	5.0	114.5	1.5	4.5	114.5	1.4	4.0	114.5	1.2	A8630552
3.5	114.5	0.7	3.0	114.5	0.2	7.0	115.0	0.5	6.5	115.0	1.3	A8630553
6.0	115.0	1.6	5.5	115.0	1.4	5.0	115.0	0.8	4.5	115.0	0.5	A8630554
4.0	115.0	0.6	3.5	115.0	0.5	3.0	115.0	0.1	6.0	115.5	0.5	A8630555
5.5	115.5	0.6	4.0	116.5	0.1	3.5	116.5	0.1	4.0	117.0	0.4	A8630556
3.5	117.0	0.3	8.0	117.5	0.6	7.5	117.5	0.9	7.0	117.5	0.6	A8630557
6.5	117.5	0.6	6.0	117.5	0.6	5.5	117.5	0.5	5.0	117.5	0.5	A8630558
4.5	117.5	0.8	4.0	117.5	0.8	3.5	117.5	0.5	..0	117.5	0.1	A8630559
8.5	118.0	0.2	8.0	118.0	2.0	7.5	118.0	2.0	7.0	118.0	2.0	A8630560
6.5	118.0	1.3	6.0	118.0	1.1	5.5	118.0	1.1	5.0	118.0	1.2	A8630561

4.5	118.0	1.2	4.0	118.0	1.0	3.5	118.0	0.4	8.5	118.5	0.5	A8630562
8.0	118.5	2.0	7.5	118.5	2.0	7.0	118.5	1.9	6.5	118.5	1.5	A8630563
6.0	118.5	1.5	5.5	118.5	1.5	5.0	118.5	1.5	4.5	118.5	1.5	A8630564
4.0	118.5	0.8	3.5	118.5	0.3	8.5	119.0	0.1	8.0	119.0	0.8	A8630565
7.5	119.0	0.9	7.0	119.0	1.6	6.5	119.0	1.5	6.0	119.0	1.5	A8630566
5.5	119.0	1.5	5.0	119.0	1.5	4.5	119.0	1.5	4.0	119.0	0.9	A8630567
3.5	119.0	0.3	3.0	119.0	0.1	7.0	119.5	0.8	6.5	119.5	1.1	A8630568
6.0	119.5	1.0	5.5	119.5	1.0	5.0	119.5	1.0	4.5	119.5	1.0	A8630569
4.0	119.5	0.8	3.5	119.5	0.3	6.5	120.0	1.1	6.0	120.0	1.1	A8630570
5.5	120.0	1.2	5.0	120.0	1.2	4.5	120.0	1.1	4.0	120.0	1.5	A8630571
3.5	120.0	0.4	6.5	120.5	1.0	6.0	120.5	1.0	5.5	120.5	1.0	A8630572
5.0	120.5	1.0	4.5	120.5	1.0	4.0	120.5	1.0	..5	120.5	0.5	A8630573
7.0	121.0	0.4	6.5	121.0	1.0	6.0	121.0	1.0	5.5	121.0	1.0	A8630574
5.0	121.0	1.0	4.5	121.0	1.0	4.0	121.0	0.8	..5	121.0	0.5	A8630575
7.0	121.5	0.3	6.5	121.5	0.5	6.0	121.5	0.5	5.5	121.5	0.5	A8630576
5.0	121.5	0.5	4.5	121.5	0.5	4.0	121.5	0.5	..5	121.5	0.4	A8630577
7.0	122.0	0.4	6.5	122.0	0.9	6.0	122.0	1.0	5.5	122.0	1.0	A8630578
5.0	122.0	1.0	4.5	122.0	1.0	4.0	122.0	1.0	..5	122.0	0.7	A8630579
3.0	122.0	0.1	7.0	122.5	0.1	6.5	122.5	0.4	6.0	122.5	0.5	A8630580
5.5	122.5	0.5	5.0	122.5	0.8	4.5	122.5	1.0	4.0	122.5	1.0	A8630581
3.5	122.5	0.6	6.0	123.0	0.1	5.5	123.0	0.1	5.0	123.0	0.2	A8630582
4.5	123.0	0.4	4.0	123.0	0.4	3.5	123.0	0.2	5.5	18.0	0.1	A8630583
999.9												

LIQ WATER DROPLET FIELD TEST DATA AUGUST 9.1963

Y	X	H2O	Y	X	H2O	Y	X	H2O	Y	X	H2O	CARD NUMBER
4.5	8.5	0.3	4.0	8.5	0.5	3.5	8.5	0.6	..0	8.5	0.5	A9630001
2.5	8.5	0.1	5.0	9.0	0.4	4.5	9.0	0.8	4.0	9.0	1.0	A9630002
3.5	9.0	1.0	3.0	9.0	0.5	2.5	9.0	0.2	5.5	9.5	0.3	A9630003
5.0	9.5	0.7	4.5	9.5	1.0	4.0	9.5	1.0	..5	9.5	0.9	A9630004
3.0	9.5	0.5	2.5	9.5	0.2	5.5	10.0	0.6	5.0	10.0	1.0	A9630005
4.5	10.0	1.0	4.0	10.0	1.0	3.5	10.0	0.9	..0	10.0	0.5	A9630006
2.5	10.0	0.2	6.0	10.5	0.5	5.5	10.5	0.3	5.0	10.5	1.0	A9630007
4.5	10.5	1.0	4.0	10.5	1.0	3.5	10.5	0.7	..0	10.5	0.5	A9630008
2.5	10.5	0.3	6.5	11.0	0.6	6.0	11.0	1.0	5.5	11.0	1.0	A9630009
5.0	11.0	0.9	4.5	11.0	0.8	4.0	11.0	0.7	..5	11.0	0.5	A9630010
3.0	11.0	0.3	7.0	11.5	0.9	6.5	11.5	1.5	6.0	11.5	1.5	A9630011
5.5	11.5	1.5	5.0	11.5	1.2	4.5	11.5	1.0	4.0	11.5	0.9	A9630012
3.5	11.5	0.7	3.0	11.5	0.5	2.5	11.5	0.2	8.0	12.0	0.7	A9630013
7.5	12.0	1.5	7.0	12.0	2.0	6.5	12.0	1.9	6.0	12.0	1.7	A9630014
5.5	12.0	1.5	5.0	12.0	1.3	4.5	12.0	1.1	4.0	12.0	0.9	A9630015
3.5	12.0	0.7	3.0	12.0	0.5	2.5	12.0	0.2	8.5	12.5	0.4	A9630016
8.0	12.5	1.5	7.5	12.5	2.0	7.0	12.5	2.0	6.5	12.5	1.9	A9630017
6.0	12.5	1.7	5.5	12.5	1.5	5.0	12.5	1.3	4.5	12.5	1.1	A9630018
4.0	12.5	0.9	3.5	12.5	0.7	3.0	12.5	0.5	2.5	12.5	0.2	A9630019
8.5	13.0	1.0	8.0	13.0	2.0	7.5	13.0	2.0	7.0	13.0	2.0	A9630020
6.5	13.0	1.8	6.0	13.0	1.7	5.5	13.0	1.5	5.0	13.0	1.3	A9630021
4.5	13.0	1.2	4.0	13.0	1.0	3.5	13.0	0.3	..0	13.0	0.5	A9630022
2.5	13.0	0.2	8.5	13.5	0.5	8.0	13.5	1.8	7.5	13.5	2.0	A9630023
7.0	13.5	2.0	6.5	13.5	1.9	6.0	13.5	1.7	5.5	13.5	1.5	A9630024
5.0	13.5	1.4	4.5	13.5	1.2	4.0	13.5	1.0	..5	13.5	0.3	A9630025
3.0	13.5	0.5	2.5	13.5	0.1	8.5	14.0	0.5	8.0	14.0	1.3	A9630026
7.5	14.0	2.0	7.0	14.0	2.0	6.5	14.0	1.9	6.0	14.0	1.7	A9630027
5.5	14.0	1.5	5.0	14.0	1.3	4.5	14.0	1.2	4.0	14.0	0.9	A9630028
3.5	14.0	0.7	3.0	14.0	0.5	2.5	14.0	0.3	8.5	14.5	0.1	A9630029
8.0	14.5	0.7	7.5	14.5	1.5	7.0	14.5	2.0	6.5	14.5	1.9	A9630030
6.0	14.5	1.7	5.5	14.5	1.4	5.0	14.5	1.1	4.5	14.5	0.9	A9630031
4.0	14.5	0.7	3.5	14.5	0.6	3.0	14.5	0.4	2.5	14.5	0.3	A9630032
7.0	15.0	0.6	6.5	15.0	0.7	6.0	15.0	0.5	5.5	15.0	0.4	A9630033
5.0	15.0	0.4	4.5	15.0	0.3	4.0	15.0	0.3	..5	15.0	0.1	A9630034
3.5	18.5	0.3	3.0	18.5	0.2	2.5	18.5	0.2	4.0	19.0	0.5	A9630035
3.5	19.0	0.7	3.0	19.0	0.7	2.5	19.0	0.5	4.5	19.5	0.7	A9630036
4.0	19.5	1.0	3.5	19.5	1.0	3.0	19.5	0.7	2.5	19.5	0.5	A9630037
4.5	20.0	1.0	4.0	20.0	1.0	3.5	20.0	1.0	..0	20.0	0.7	A9630038
2.5	20.0	0.5	4.5	20.5	0.5	4.0	20.5	1.0	..5	20.5	0.9	A9630039

3.0	20.5	0.7	2.5	20.5	0.5	4.5	21.0	0.7	4.0	21.0	0.5	A9630040
3.5	21.0	0.6	3.0	21.0	0.6	2.5	21.0	0.5	..5	21.5	0.1	A9630041
3.0	21.5	0.2	2.5	21.5	0.2	6.0	24.5	0.1	5.5	24.5	0.2	A9630042
5.0	24.5	0.2	4.5	24.5	0.1	4.0	24.5	0.1	..5	24.5	0.2	A9630043
3.0	24.5	0.2	2.5	24.5	0.1	11.5	25.0	0.2	11.0	25.0	0.3	A9630044
10.5	25.0	0.4	10.0	25.0	0.5	9.5	25.0	0.6	9.0	25.0	0.5	A9630045
8.5	25.0	0.4	6.5	25.0	0.1	6.0	25.0	0.3	5.5	25.0	0.5	A9630046
5.0	25.0	0.5	4.5	25.0	0.5	4.0	25.0	0.5	..5	25.0	0.4	A9630047
3.0	25.0	0.3	2.5	25.0	0.2	12.5	25.5	0.2	12.0	25.5	0.5	A9630048
11.5	25.5	0.7	11.0	25.5	1.0	10.5	25.5	1.1	10.0	25.5	1.3	A9630049
9.5	25.5	1.4	9.0	25.5	1.3	8.5	25.5	0.9	8.0	25.5	0.4	A9630050
7.5	25.5	0.4	7.0	25.5	0.4	6.5	25.5	0.5	6.0	25.5	0.7	A9630051
5.5	25.5	0.7	5.0	25.5	0.7	4.5	25.5	0.7	4.0	25.5	0.7	A9630052
3.5	25.5	0.6	3.0	25.5	0.4	2.5	25.5	0.2	1..5	26.0	0.1	A9630053
13.0	26.0	0.4	12.5	26.0	0.8	12.0	26.0	1.1	11.5	26.0	1.5	A9630054
11.0	26.0	2.0	10.5	26.0	2.3	10.0	26.0	2.2	9.5	26.0	2.0	A9630055
9.0	26.0	1.7	8.5	26.0	1.5	8.0	26.0	1.1	7.5	26.0	1.0	A9630056
7.0	26.0	0.9	6.5	26.0	0.9	6.0	26.0	1.1	5.5	26.0	1.1	A9630057
5.0	26.0	1.1	4.5	26.0	0.9	4.0	26.0	0.7	..5	26.0	0.6	A9630058
3.0	26.0	0.5	2.5	26.0	0.2	17.0	26.5	0.3	16.5	26.5	0.4	A9630059
16.0	26.5	0.4	15.5	26.5	0.4	15.0	26.5	0.4	14.5	26.5	0.4	A9630060
14.0	26.5	0.5	13.5	26.5	0.7	13.0	26.5	1.0	12.5	26.5	1.5	A9630061
12.0	26.5	2.0	11.5	26.5	2.5	11.0	26.5	2.5	10.5	26.5	2.5	A9630062
10.0	26.5	2.5	9.5	26.5	2.4	9.0	26.5	1.9	8.5	26.5	1.7	A9630063
8.0	26.5	1.5	7.5	26.5	1.4	7.0	26.5	1.3	6.5	26.5	1.3	A9630064
6.0	26.5	1.2	5.5	26.5	1.2	5.0	26.5	1.1	4.5	26.5	1.0	A9630065
4.0	26.5	1.0	3.5	26.5	0.7	3.0	26.5	0.5	2.5	26.5	0.2	A9630066
17.5	27.0	0.5	17.0	27.0	0.3	16.5	27.0	1.0	16.0	27.0	1.1	A9630067
15.5	27.0	1.3	15.0	27.0	1.4	14.5	27.0	1.3	14.0	27.0	1.4	A9630068
13.5	27.0	1.5	13.0	27.0	2.0	12.5	27.0	2.5	12.0	27.0	2.5	A9630069
11.5	27.0	2.5	11.0	27.0	2.5	10.5	27.0	2.5	10.0	27.0	2.5	A9630070
9.5	27.0	2.4	9.0	27.0	2.3	8.5	27.0	2.2	8.0	27.0	2.1	A9630071
7.5	27.0	1.9	7.0	27.0	1.7	6.5	27.0	1.5	6.0	27.0	1.4	A9630072
5.5	27.0	1.3	5.0	27.0	1.2	4.5	27.0	1.1	4.0	27.0	1.0	A9630073
3.5	27.0	0.7	3.0	27.0	0.5	2.5	27.0	0.3	18.0	27.5	0.4	A9630074
17.5	27.5	1.0	17.0	27.5	1.5	16.5	27.5	2.3	16.0	27.5	2.4	A9630075
15.5	27.5	2.5	15.0	27.5	2.4	14.5	27.5	2.5	14.0	27.5	2.5	A9630076
13.5	27.5	2.5	13.0	27.5	2.5	12.5	27.5	2.5	12.0	27.5	2.5	A9630077
11.5	27.5	2.5	11.0	27.5	2.5	10.5	27.5	2.5	10.0	27.5	2.4	A9630078
9.5	27.5	2.3	9.0	27.5	2.3	8.5	27.5	2.2	8.0	27.5	2.1	A9630079
7.5	27.5	2.0	7.0	27.5	1.9	6.5	27.5	1.7	6.0	27.5	1.5	A9630080
5.5	27.5	1.4	5.0	27.5	1.3	4.5	27.5	1.2	4.0	27.5	1.0	A9630081
3.5	27.5	0.7	3.0	27.5	0.5	2.5	27.5	0.3	18.5	28.0	0.3	A9630082

18.0	28.0	0.9	17.5	28.0	1.4	17.0	28.0	2.5	16.5	28.0	2.5	A9630083
16.0	28.0	2.5	15.5	28.0	2.5	15.0	28.0	2.5	14.5	28.0	2.5	A9630084
14.0	28.0	2.5	13.5	28.0	2.5	13.0	28.0	2.5	12.5	28.0	2.5	A9630085
12.0	28.0	2.5	11.5	28.0	2.5	11.0	28.0	2.5	10.5	28.0	2.5	A9630086
10.0	28.0	2.5	9.5	28.0	2.4	9.0	28.0	2.3	8.5	28.0	2.3	A9630087
8.0	28.0	2.2	7.5	28.0	2.1	7.0	28.0	1.9	6.5	28.0	1.7	A9630088
6.0	28.0	1.6	5.5	28.0	1.4	5.0	28.0	1.3	4.5	28.0	1.1	A9630089
4.0	28.0	1.0	3.5	28.0	0.7	3.0	28.0	0.5	2.5	28.0	0.3	A9630090
18.5	28.5	0.4	18.0	28.5	1.2	17.5	28.5	1.6	17.0	28.5	2.3	A9630091
16.5	28.5	2.5	16.0	28.5	2.4	15.5	28.5	2.3	15.0	28.5	2.1	A9630092
14.5	28.5	2.1	14.0	28.5	2.3	13.5	28.5	2.4	1..0	28.5	2.5	A9630093
12.5	28.5	2.5	12.0	28.5	2.5	11.5	28.5	2.5	11.0	28.5	2.5	A9630094
10.5	28.5	2.5	10.0	28.5	2.4	9.5	28.5	2.4	9.0	28.5	2.3	A9630095
8.5	28.5	2.3	8.0	28.5	2.2	7.5	28.5	2.1	7.0	28.5	1.9	A9630096
6.5	28.5	1.7	6.0	28.5	1.6	5.5	28.5	1.5	5.0	28.5	1.3	A9630097
4.5	28.5	1.2	4.0	28.5	1.0	3.5	28.5	0.7	..0	28.5	0.5	A9630098
2.5	28.5	0.2	18.0	29.0	0.7	17.5	29.0	1.0	17.0	29.0	1.1	A9630099
16.5	29.0	1.2	16.0	29.0	1.5	15.5	29.0	2.0	15.0	29.0	2.2	A9630100
14.5	29.0	2.3	14.0	29.0	2.3	13.5	29.0	2.3	1..0	29.0	2.2	A9630101
12.5	29.0	2.5	12.0	29.0	2.5	11.5	29.0	2.5	11.0	29.0	2.5	A9630102
10.5	29.0	2.5	10.0	29.0	2.4	9.5	29.0	2.4	9.0	29.0	2.3	A9630103
8.5	29.0	2.2	8.0	29.0	2.1	7.5	29.0	2.0	7.0	29.0	1.9	A9630104
6.5	29.0	1.7	6.0	29.0	1.6	5.5	29.0	1.5	5.0	29.0	1.3	A9630105
4.5	29.0	1.1	4.0	29.0	0.4	3.5	29.0	0.3	..0	29.0	0.5	A9630106
18.0	29.5	0.1	17.5	29.5	0.4	17.0	29.5	0.5	16.5	29.5	0.5	A9630107
16.0	29.5	0.4	15.5	29.5	0.7	15.0	29.5	2.4	14.5	29.5	2.5	A9630108
14.0	29.5	2.5	13.5	29.5	2.5	13.0	29.5	2.5	12.5	29.5	2.5	A9630109
12.0	29.5	2.5	11.5	29.5	2.5	11.0	29.5	2.5	10.5	29.5	2.5	A9630110
10.0	29.5	2.5	9.5	29.5	2.4	9.0	29.5	2.3	8.5	29.5	2.2	A9630111
8.0	29.5	2.1	7.5	29.5	2.0	7.0	29.5	1.9	6.5	29.5	1.7	A9630112
6.0	29.5	1.6	5.5	29.5	1.5	5.0	29.5	1.3	4.5	29.5	1.1	A9630113
4.0	29.5	1.0	3.5	29.5	0.7	3.0	29.5	0.5	2.5	29.5	0.2	A9630114
15.5	30.0	0.5	15.0	30.0	2.0	14.5	30.0	2.5	14.0	30.0	2.5	A9630115
13.5	30.0	2.5	13.0	30.0	2.5	12.5	30.0	2.5	12.0	30.0	2.5	A9630116
11.5	30.0	2.5	11.0	30.0	2.5	10.5	30.0	2.5	10.0	30.0	2.5	A9630117
9.5	30.0	2.4	9.0	30.0	2.3	8.5	30.0	2.3	8.0	30.0	2.2	A9630118
7.5	30.0	2.1	7.0	30.0	1.9	6.5	30.0	1.7	6.0	30.0	1.6	A9630119
5.5	30.0	1.5	5.0	30.0	1.3	4.5	30.0	1.1	4.0	30.0	0.9	A9630120
3.5	30.0	0.7	3.0	30.0	0.5	2.5	30.0	0.3	15.0	30.5	1.3	A9630121
14.5	30.5	2.5	14.0	30.5	2.5	13.5	30.5	2.5	1..0	30.5	2.5	A9630122
12.5	30.5	2.5	12.0	30.5	2.5	11.5	30.5	2.5	11.0	30.5	2.5	A9630123
10.5	30.5	2.5	10.0	30.5	2.5	9.5	30.5	2.4	9.0	30.5	2.3	A9630124
8.5	30.5	2.3	8.0	30.5	2.2	7.5	30.5	2.1	7.0	30.5	2.0	A9630125
6.5	30.5	1.7	6.0	30.5	1.6	5.5	30.5	1.5	5.0	30.5	1.3	A9630126

4.5	30.5	1.1	4.0	30.5	0.9	3.5	30.5	0.7	..0	30.5	0.5	A9630127
2.5	30.5	0.3	15.0	31.0	1.3	14.5	31.0	1.8	14.0	31.0	2.0	A9630128
13.5	31.0	2.5	13.0	31.0	2.5	12.5	31.0	2.5	12.0	31.0	2.5	A9630129
11.5	31.0	2.5	11.0	31.0	2.5	10.5	31.0	2.5	10.0	31.0	2.5	A9630130
9.5	31.0	2.5	9.0	31.0	2.4	8.5	31.0	2.3	8.0	31.0	2.2	A9630131
7.5	31.0	2.1	7.0	31.0	2.0	6.5	31.0	1.8	6.0	31.0	1.7	A9630132
5.5	31.0	1.5	5.0	31.0	1.3	4.5	31.0	1.0	4.0	31.0	0.9	A9630133
3.5	31.0	0.7	3.0	31.0	0.5	2.5	31.0	0.3	15.0	31.5	0.1	A9630134
14.5	31.5	0.3	14.0	31.5	0.6	13.5	31.5	1.4	1..0	31.5	2.0	A9630135
12.5	31.5	2.5	12.0	31.5	2.5	11.5	31.5	2.5	11.0	31.5	2.5	A9630136
10.5	31.5	2.5	10.0	31.5	2.5	9.5	31.5	2.5	9.0	31.5	2.4	A9630137
8.5	31.5	2.3	8.0	31.5	2.2	7.5	31.5	2.1	7.0	31.5	2.0	A9630138
6.5	31.5	1.7	6.0	31.5	1.6	5.5	31.5	1.5	5.0	31.5	1.3	A9630139
4.5	31.5	1.0	4.0	31.5	0.9	3.5	31.5	0.7	..0	31.5	0.5	A9630140
14.0	32.0	0.5	13.5	32.0	1.1	13.0	32.0	1.4	12.5	32.0	1.7	A9630141
12.0	32.0	2.0	11.5	32.0	2.5	11.0	32.0	2.5	10.5	32.0	2.5	A9630142
10.0	32.0	2.5	9.5	32.0	2.5	9.0	32.0	2.4	8.5	32.0	2.3	A9630143
8.0	32.0	2.2	7.5	32.0	2.1	7.0	32.0	1.8	6.5	32.0	1.7	A9630144
6.0	32.0	1.6	5.5	32.0	1.4	5.0	32.0	1.3	4.5	32.0	1.1	A9630145
4.0	32.0	0.9	3.5	32.0	0.7	3.0	32.0	0.5	2.5	32.0	0.3	A9630146
13.5	32.5	0.5	13.0	32.5	0.7	12.5	32.5	1.0	12.0	32.5	1.2	A9630147
11.5	32.5	1.4	11.0	32.5	1.5	10.5	32.5	2.0	10.0	32.5	2.2	A9630148
9.5	32.5	2.2	9.0	32.5	2.1	8.5	32.5	2.0	8.0	32.5	1.9	A9630149
7.5	32.5	1.7	7.0	32.5	1.6	6.5	32.5	1.5	6.0	32.5	1.4	A9630150
5.5	32.5	1.3	5.0	32.5	1.2	4.5	32.5	1.1	4.0	32.5	0.9	A9630151
3.5	32.5	0.7	3.0	32.5	0.5	2.5	32.5	0.2	12.0	33.0	0.2	A9630152
11.5	33.0	0.5	11.0	33.0	0.8	10.5	33.0	1.1	10.0	33.0	1.3	A9630153
9.5	33.0	1.5	9.0	33.0	1.5	8.5	33.0	1.5	8.0	33.0	1.5	A9630154
7.5	33.0	1.5	7.0	33.0	1.5	6.5	33.0	1.5	6.0	33.0	1.5	A9630155
5.5	33.0	1.5	5.0	33.0	1.5	4.5	33.0	1.2	4.0	33.0	0.9	A9630156
3.5	33.0	0.7	3.0	33.0	0.5	2.5	33.0	0.2	10.5	33.5	0.5	A9630157
10.0	33.5	0.9	9.5	33.5	1.3	9.0	33.5	1.4	8.5	33.5	1.5	A9630158
8.0	33.5	1.7	7.5	33.5	2.0	7.0	33.5	1.9	6.5	33.5	1.8	A9630159
6.0	33.5	1.7	5.5	33.5	1.6	5.0	33.5	1.5	4.5	33.5	1.2	A9630160
4.0	33.5	1.0	3.5	33.5	0.7	3.0	33.5	0.5	2.5	33.5	0.2	A9630161
10.0	34.0	1.0	9.5	34.0	1.7	9.0	34.0	2.0	8.5	34.0	2.0	A9630162
8.0	34.0	2.0	7.5	34.0	2.0	7.0	34.0	2.0	6.5	34.0	2.0	A9630163
6.0	34.0	1.8	5.5	34.0	1.6	5.0	34.0	1.5	4.5	34.0	1.3	A9630164
4.0	34.0	1.0	3.5	34.0	0.7	3.0	34.0	0.2	11.0	34.5	0.1	A9630165
10.5	34.5	1.0	10.0	34.5	1.7	9.5	34.5	2.0	9.0	34.5	2.0	A9630166
8.5	34.5	2.0	8.0	34.5	2.0	7.5	34.5	2.0	7.0	34.5	2.0	A9630167
6.5	34.5	2.0	6.0	34.5	1.7	5.5	34.5	1.6	5.0	34.5	1.4	A9630168
4.5	34.5	1.3	4.0	34.5	1.0	3.5	34.5	0.7	..0	34.5	0.5	A9630169

2.5	34.5	0.1	12.0	35.0	0.4	11.5	35.0	1.4	11.0	35.0	1.9	A9630170
10.5	35.0	2.7	10.0	35.0	2.5	9.5	35.0	2.4	9.0	35.0	2.3	A9630171
8.5	35.0	2.3	8.0	35.0	2.2	7.5	35.0	2.2	7.0	35.0	2.1	A9630172
6.5	35.0	2.0	6.0	35.0	1.8	5.5	35.0	1.6	5.0	35.0	1.4	A9630173
4.5	35.0	1.3	4.0	35.0	1.1	3.5	35.0	0.3	..0	35.0	0.5	A9630174
2.5	35.0	0.2	12.5	35.5	0.4	12.0	35.5	1.7	11.5	35.5	2.5	A9630175
11.0	35.5	2.5	10.5	35.5	2.5	10.0	35.5	2.4	9.5	35.5	2.4	A9630176
9.0	35.5	2.3	8.5	35.5	2.3	8.0	35.5	2.2	7.5	35.5	2.2	A9630177
7.0	35.5	2.1	6.5	35.5	2.0	6.0	35.5	1.9	5.5	35.5	1.7	A9630178
5.0	35.5	1.5	4.5	35.5	1.3	4.0	35.5	1.1	..5	35.5	0.8	A9630179
3.0	35.5	0.5	2.5	35.5	0.2	12.5	36.0	0.7	12.0	36.0	1.6	A9630180
11.5	36.0	2.0	11.0	36.0	2.5	10.5	36.0	2.5	10.0	36.0	2.5	A9630181
9.5	36.0	2.4	9.0	36.0	2.4	8.5	36.0	2.3	8.0	36.0	2.3	A9630182
7.5	36.0	2.2	7.0	36.0	2.1	6.5	36.0	2.0	6.0	36.0	1.9	A9630183
5.5	36.0	1.7	5.0	36.0	1.5	4.5	36.0	1.4	4.0	36.0	1.2	A9630184
3.5	36.0	0.9	3.0	36.0	0.6	2.5	36.0	0.2	12.0	36.5	0.5	A9630185
11.5	36.5	1.1	11.0	36.5	2.0	10.5	36.5	2.5	10.0	36.5	2.5	A9630186
9.5	36.5	2.4	9.0	36.5	2.4	8.5	36.5	2.3	8.0	36.5	2.3	A9630187
7.5	36.5	2.2	7.0	36.5	2.2	6.5	36.5	2.1	6.0	36.5	1.9	A9630188
5.5	36.5	1.7	5.0	36.5	1.5	4.5	36.5	1.3	4.0	36.5	1.2	A9630189
3.5	36.5	1.0	3.0	36.5	0.6	2.5	36.5	0.3	11.5	37.0	0.2	A9630190
11.0	37.0	1.2	10.5	37.0	1.6	10.0	37.0	1.9	9.5	37.0	2.0	A9630191
9.0	37.0	2.0	8.5	37.0	2.0	8.0	37.0	2.0	7.5	37.0	2.0	A9630192
7.0	37.0	2.0	6.5	37.0	2.0	6.0	37.0	1.9	5.5	37.0	1.7	A9630193
5.0	37.0	1.5	4.5	37.0	1.3	4.0	37.0	1.1	..5	37.0	0.9	A9630194
3.0	37.0	0.6	2.5	37.0	0.3	10.5	37.5	0.5	10.0	37.5	0.5	A9630195
9.5	37.5	1.1	9.0	37.5	1.6	8.5	37.5	1.9	8.0	37.5	2.0	A9630196
7.5	37.5	2.0	7.0	37.5	2.0	6.5	37.5	2.0	6.0	37.5	1.8	A9630197
5.5	37.5	1.6	5.0	37.5	1.4	4.5	37.5	1.3	4.0	37.5	1.1	A9630198
3.5	37.5	0.8	3.0	37.5	0.6	2.5	37.5	0.3	9.0	38.0	0.6	A9630199
8.5	38.0	1.0	8.0	38.0	1.3	7.5	38.0	1.5	7.0	38.0	1.5	A9630200
6.5	38.0	1.5	6.0	38.0	1.4	5.5	38.0	1.3	5.0	38.0	1.1	A9630201
4.5	38.0	1.0	4.0	38.0	0.9	3.5	38.0	0.7	..0	38.0	0.5	A9630202
2.5	38.0	0.3	9.0	38.5	0.5	8.5	38.5	0.8	8.0	38.5	0.9	A9630203
7.5	38.5	1.0	7.0	38.5	1.0	6.5	38.5	1.0	6.0	38.5	1.0	A9630204
5.5	38.5	1.0	5.0	38.5	1.0	4.5	38.5	0.9	4.0	38.5	0.8	A9630205
3.5	38.5	0.7	3.0	38.5	0.6	2.5	38.5	0.3	8.0	39.0	0.2	A9630206
7.5	39.0	0.3	7.0	39.0	0.3	6.5	39.0	0.4	6.0	39.0	0.5	A9630207
5.5	39.0	0.5	5.0	39.0	0.5	4.5	39.0	0.5	4.0	39.0	0.5	A9630208
3.5	39.0	0.5	3.0	39.0	0.5	2.5	39.0	0.3	6.0	39.5	0.1	A9630209
5.5	39.5	0.4	5.0	39.5	0.5	4.5	39.5	0.5	4.0	39.5	0.5	A9630210
3.5	39.5	0.5	3.0	39.5	0.5	2.5	39.5	0.3	7.0	40.0	0.5	A9630211
6.5	40.0	0.1	6.0	40.0	0.2	5.5	40.0	0.7	5.0	40.0	1.0	A9630212
4.5	40.0	1.0	4.0	40.0	0.9	3.5	40.0	0.7	..0	40.0	0.6	A9630213

2.5	40.0	0.3	8.5	40.5	0.4	8.0	40.5	0.9	7.5	40.5	1.2	A9630214
7.0	40.5	1.4	6.5	40.5	1.5	6.0	40.5	1.5	5.5	40.5	1.4	A9630215
5.0	40.5	1.3	4.5	40.5	1.1	4.0	40.5	0.9	3.5	40.5	0.7	A9630216
3.0	40.5	0.5	2.5	40.5	0.3	9.0	41.0	0.6	8.5	41.0	1.4	A9630217
8.0	41.0	1.9	7.5	41.0	2.0	7.0	41.0	2.0	6.5	41.0	1.9	A9630218
6.0	41.0	1.7	5.5	41.0	1.5	5.0	41.0	1.3	4.5	41.0	1.0	A9630219
4.0	41.0	0.9	3.5	41.0	0.7	3.0	41.0	0.6	2.5	41.0	0.3	A9630220
9.5	41.5	0.6	9.0	41.5	1.3	8.5	41.5	1.9	8.0	41.5	2.0	A9630221
7.5	41.5	2.0	7.0	41.5	2.0	6.5	41.5	2.0	6.0	41.5	1.3	A9630222
5.5	41.5	1.5	5.0	41.5	1.3	4.5	41.5	1.0	4.0	41.5	0.8	A9630223
3.5	41.5	0.7	3.0	41.5	0.6	2.5	41.5	0.5	9.5	42.0	0.3	A9630224
9.0	42.0	1.3	8.5	42.0	1.8	8.0	42.0	2.0	7.5	42.0	2.0	A9630225
7.0	42.0	2.0	6.5	42.0	1.9	6.0	42.0	1.7	5.5	42.0	1.5	A9630226
5.0	42.0	1.3	4.5	42.0	1.1	4.0	42.0	0.9	3.5	42.0	0.8	A9630227
3.0	42.0	0.7	2.5	42.0	0.5	9.0	42.5	0.8	8.5	42.5	1.5	A9630228
8.0	42.5	1.9	7.5	42.5	2.0	7.0	42.5	2.0	6.5	42.5	2.0	A9630229
6.0	42.5	1.7	5.5	42.5	1.5	5.0	42.5	1.3	4.5	42.5	1.1	A9630230
4.0	42.5	0.9	3.5	42.5	0.8	3.0	42.5	0.7	2.5	42.5	0.5	A9630231
8.5	43.0	0.5	8.0	43.0	0.9	7.5	43.0	0.8	7.0	43.0	0.6	A9630232
6.5	43.0	0.7	6.0	43.0	0.8	5.5	43.0	0.9	5.0	43.0	0.8	A9630233
4.5	43.0	0.8	4.0	43.0	0.7	3.5	43.0	0.7	3.0	43.0	0.6	A9630234
2.5	43.0	0.3	5.0	43.5	0.1	4.5	43.5	0.2	4.0	43.5	0.3	A9630235
3.5	43.5	0.3	5.0	52.0	0.2	4.5	52.0	0.2	4.0	52.0	0.2	A9630236
3.5	52.0	0.3	3.0	52.0	0.3	2.5	52.0	0.3	2.0	52.0	0.1	A9630237
11.0	52.5	0.1	10.5	52.5	0.3	10.0	52.5	0.3	9.5	52.5	0.2	A9630238
9.0	52.5	0.1	8.5	52.5	0.1	8.0	52.5	0.2	7.5	52.5	0.3	A9630239
7.0	52.5	0.4	6.5	52.5	0.4	6.0	52.5	0.5	5.5	52.5	0.5	A9630240
5.0	52.5	0.5	4.5	52.5	0.5	4.0	52.5	0.5	3.5	52.5	0.5	A9630241
3.0	52.5	0.4	2.5	52.5	0.3	17.0	53.0	0.1	16.5	53.0	0.2	A9630242
16.0	53.0	0.2	15.5	53.0	0.2	15.0	53.0	0.2	14.5	53.0	0.1	A9630243
14.0	53.0	0.1	13.5	53.0	0.2	13.0	53.0	0.2	12.5	53.0	0.3	A9630244
12.0	53.0	0.3	11.5	53.0	0.3	11.0	53.0	0.4	10.5	53.0	0.5	A9630245
10.0	53.0	0.5	9.5	53.0	0.5	9.0	53.0	0.5	8.5	53.0	0.5	A9630246
8.0	53.0	0.6	7.5	53.0	0.7	7.0	53.0	0.8	6.5	53.0	0.8	A9630247
6.0	53.0	0.8	5.5	53.0	0.8	5.0	53.0	0.9	4.5	53.0	0.8	A9630248
4.0	53.0	0.7	3.5	53.0	0.7	3.0	53.0	0.5	2.5	53.0	0.3	A9630249
2.0	53.0	0.1	19.0	53.5	0.2	18.5	53.5	0.3	18.0	53.5	0.3	A9630250
17.5	53.5	0.2	17.0	53.5	0.4	16.5	53.5	0.5	16.0	53.5	0.5	A9630251
15.5	53.5	0.5	15.0	53.5	0.5	14.5	53.5	0.5	14.0	53.5	0.5	A9630252
13.5	53.5	0.5	13.0	53.5	0.6	12.5	53.5	0.6	12.0	53.5	0.6	A9630253
11.5	53.5	0.6	11.0	53.5	0.7	10.5	53.5	0.8	10.0	53.5	0.9	A9630254
9.5	53.5	0.9	9.0	53.5	1.0	8.5	53.5	1.0	8.0	53.5	1.0	A9630255
7.5	53.5	1.0	7.0	53.5	1.0	6.5	53.5	1.0	6.0	53.5	1.0	A9630256

5.5	53.5	1.0	5.0	53.5	1.0	4.5	53.5	1.0	4.0	53.5	1.0	A9630257
3.5	53.5	1.0	3.0	53.5	0.7	2.5	53.5	0.4	2.0	53.5	0.1	A9630258
19.0	54.0	0.5	18.5	54.0	0.5	18.0	54.0	0.5	17.5	54.0	0.5	A9630259
17.0	54.0	0.5	16.5	54.0	0.5	16.0	54.0	0.5	15.5	54.0	0.5	A9630260
15.0	54.0	0.5	14.5	54.0	0.5	14.0	54.0	0.5	1..5	54.0	0.5	A9630261
13.0	54.0	0.5	12.5	54.0	0.5	12.0	54.0	0.5	11.5	54.0	0.7	A9630262
11.0	54.0	0.8	10.5	54.0	1.0	10.0	54.0	1.2	9.5	54.0	1.2	A9630263
9.0	54.0	1.3	8.5	54.0	1.3	8.0	54.0	1.3	7.5	54.0	1.4	A9630264
7.0	54.0	1.4	6.5	54.0	1.3	6.0	54.0	1.3	5.5	54.0	1.0	A9630265
5.0	54.0	1.0	4.5	54.0	1.0	4.0	54.0	1.0	..5	54.0	1.0	A9630266
3.0	54.0	0.8	2.5	54.0	0.5	2.0	54.0	0.1	19.0	54.5	0.5	A9630267
18.5	54.5	0.8	18.0	54.5	1.0	17.5	54.5	1.0	17.0	54.5	1.0	A9630268
16.5	54.5	1.0	16.0	54.5	1.0	15.5	54.5	1.0	15.0	54.5	1.0	A9630269
14.5	54.5	1.0	14.0	54.5	0.9	13.5	54.5	0.9	1..0	54.5	0.8	A9630270
12.5	54.5	0.6	12.0	54.5	0.8	11.5	54.5	1.0	11.0	54.5	1.2	A9630271
10.5	54.5	1.4	10.0	54.5	1.4	9.5	54.5	1.5	9.0	54.5	1.5	A9630272
8.5	54.5	1.5	8.0	54.5	1.5	7.5	54.5	1.5	7.0	54.5	1.5	A9630273
6.5	54.5	1.4	6.0	54.5	1.4	5.5	54.5	1.3	5.0	54.5	1.0	A9630274
4.5	54.5	1.0	4.0	54.5	1.0	3.5	54.5	1.0	..0	54.5	0.3	A9630275
2.5	54.5	0.5	19.0	55.0	0.6	18.5	55.0	0.7	18.0	55.0	0.9	A9630276
17.5	55.0	1.0	17.0	55.0	0.8	16.5	55.0	0.6	16.0	55.0	0.5	A9630277
15.5	55.0	0.5	15.0	55.0	0.5	14.5	55.0	0.5	14.0	55.0	0.5	A9630278
13.5	55.0	0.5	13.0	55.0	0.5	12.5	55.0	0.7	12.0	55.0	0.9	A9630279
11.5	55.0	1.0	11.0	55.0	1.5	10.5	55.0	1.5	10.0	55.0	1.5	A9630280
9.5	55.0	1.5	9.0	55.0	1.5	8.5	55.0	1.5	8.0	55.0	1.5	A9630281
7.5	55.0	1.5	7.0	55.0	1.5	6.5	55.0	1.5	6.0	55.0	1.4	A9630282
5.5	55.0	1.3	5.0	55.0	1.2	4.5	55.0	1.0	4.0	55.0	1.0	A9630283
3.5	55.0	1.0	3.0	55.0	0.7	2.5	55.0	0.4	19.0	55.5	0.9	A9630284
18.5	55.5	0.4	18.0	55.5	0.7	17.5	55.5	0.8	17.0	55.5	1.0	A9630285
16.5	55.5	1.0	16.0	55.5	1.0	15.5	55.5	0.9	15.0	55.5	0.9	A9630286
14.5	55.5	0.8	14.0	55.5	0.7	13.5	55.5	0.7	1..0	55.5	0.7	A9630187
12.5	55.5	0.5	12.0	55.5	0.5	11.5	55.5	1.0	11.0	55.5	1.3	A9630288
10.5	55.5	1.5	10.0	55.5	1.5	9.5	55.5	1.5	9.0	55.5	1.5	A9630289
8.5	55.5	1.5	8.0	55.5	1.5	7.5	55.5	1.5	7.0	55.5	1.5	A9630290
6.5	55.5	1.5	6.0	55.5	1.4	5.5	55.5	1.3	5.0	55.5	1.2	A9630291
4.5	55.5	1.0	4.0	55.5	1.0	3.5	55.5	1.0	..0	55.5	0.7	A9630292
2.5	55.5	0.3	19.0	56.0	1.2	18.5	56.0	0.8	18.0	56.0	0.6	A9630293
17.5	56.0	0.6	17.0	56.0	0.7	16.5	56.0	0.7	16.0	56.0	0.5	A9630294
15.5	56.0	0.5	15.0	56.0	0.2	14.5	56.0	0.1	1..0	56.0	0.1	A9630295
12.5	56.0	0.5	12.0	56.0	0.5	11.5	56.0	0.7	11.0	56.0	1.0	A9630296
10.5	56.0	1.2	10.0	56.0	1.3	9.5	56.0	1.4	9.0	56.0	1.5	A9630297
8.5	56.0	1.5	8.0	56.0	1.5	7.5	56.0	1.5	7.0	56.0	1.5	A9630298
6.5	56.0	1.5	6.0	56.0	1.5	5.5	56.0	1.4	5.0	56.0	1.3	A9630299
4.5	56.0	1.1	4.0	56.0	1.0	3.5	56.0	1.0	..0	56.0	0.7	A9630300

2.5	56.0	0.3	19.0	56.5	1.5	18.5	56.5	1.2	18.0	56.5	0.8	A9630301
17.5	56.5	0.6	17.0	56.5	0.5	16.5	56.5	0.5	16.0	56.5	0.4	A9630302
12.0	56.5	0.3	11.5	56.5	0.5	11.0	56.5	0.8	10.5	56.5	1.0	A9630303
10.0	56.5	1.0	9.5	56.5	1.2	9.0	56.5	1.3	8.5	56.5	1.3	A9630304
8.0	56.5	1.4	7.5	56.5	1.5	7.0	56.5	1.5	6.5	56.5	1.5	A9630305
6.0	56.5	1.5	5.5	56.5	1.4	5.0	56.5	1.4	4.5	56.5	1.3	A9630306
4.0	56.5	1.3	3.5	56.5	1.1	3.0	56.5	0.8	2.5	56.5	0.3	A9630307
19.0	57.0	1.7	18.5	57.0	1.4	18.0	57.0	1.0	17.5	57.0	0.8	A9630308
17.0	57.0	0.6	16.5	57.0	0.5	16.0	57.0	0.3	12.0	57.0	0.3	A9630309
11.5	57.0	0.4	11.0	57.0	0.5	10.5	57.0	0.8	10.0	57.0	1.0	A9630310
9.5	57.0	1.0	9.0	57.0	1.0	8.5	57.0	1.1	8.0	57.0	1.1	A9630311
7.5	57.0	1.2	7.0	57.0	1.4	6.5	57.0	1.4	6.0	57.0	1.4	A9630312
5.5	57.0	1.3	5.0	57.0	1.3	4.5	57.0	1.1	4.0	57.0	1.0	A9630313
3.5	57.0	1.0	3.0	57.0	0.8	2.5	57.0	0.3	19.0	57.5	2.0	A9630314
18.5	57.5	1.8	18.0	57.5	1.5	17.5	57.5	1.1	17.0	57.5	0.8	A9630315
16.5	57.5	0.6	16.0	57.5	0.5	15.5	57.5	0.5	15.0	57.5	0.4	A9630316
14.5	57.5	0.3	14.0	57.5	0.3	13.5	57.5	0.3	1..0	57.5	0.4	A9630317
12.5	57.5	0.5	12.0	57.5	0.5	11.5	57.5	0.5	11.0	57.5	0.5	A9630318
10.5	57.5	0.5	10.0	57.5	0.7	9.5	57.5	0.9	9.0	57.5	1.0	A9630319
8.5	57.5	1.0	8.0	57.5	1.0	7.5	57.5	1.0	7.0	57.5	1.2	A9630320
6.5	57.5	1.2	6.0	57.5	1.2	5.5	57.5	1.2	5.0	57.5	1.1	A9630321
4.5	57.5	1.0	4.0	57.5	1.0	3.5	57.5	0.7	..0	57.5	0.3	A9630322
2.5	57.5	0.3	19.0	58.0	2.0	18.5	58.0	1.9	18.0	58.0	1.6	A9630323
17.5	58.0	1.3	17.0	58.0	0.8	16.5	58.0	0.7	16.0	58.0	0.5	A9630324
15.5	58.0	0.5	15.0	58.0	0.5	14.5	58.0	0.5	14.0	58.0	0.5	A9630325
13.5	58.0	0.5	13.0	58.0	0.5	12.5	58.0	0.5	12.0	58.0	0.5	A9630326
11.5	58.0	0.5	11.0	58.0	0.7	10.5	58.0	0.7	10.0	58.0	0.6	A9630327
9.5	58.0	0.7	9.0	58.0	0.8	8.5	58.0	1.0	8.0	58.0	1.0	A9630328
7.5	58.0	1.0	7.0	58.0	1.0	6.5	58.0	1.0	6.0	58.0	1.0	A9630329
5.5	58.0	1.0	5.0	58.0	1.0	4.5	58.0	1.0	4.0	58.0	1.0	A9630330
3.5	58.0	1.0	3.0	58.0	0.7	2.5	58.0	0.3	19.0	58.5	2.0	A9630331
18.5	58.5	2.0	18.0	58.5	1.8	17.5	58.5	1.5	17.0	58.5	1.3	A9630332
16.5	58.5	0.9	16.0	58.5	0.6	15.5	58.5	0.5	15.0	58.5	0.5	A9630333
14.5	58.5	0.5	14.0	58.5	0.3	13.5	58.5	0.3	1..0	58.5	0.3	A9630334
12.5	58.5	0.3	12.0	58.5	0.4	11.5	58.5	0.5	11.0	58.5	1.0	A9630335
10.5	58.5	1.1	10.0	58.5	1.0	9.5	58.5	0.8	9.0	58.5	0.6	A9630336
8.5	58.5	0.7	8.0	58.5	0.8	7.5	58.5	1.0	7.0	58.5	1.0	A9630337
6.5	58.5	1.0	6.0	58.5	1.0	5.5	58.5	1.0	5.0	58.5	1.0	A9630338
4.5	58.5	1.0	4.0	58.5	1.0	3.5	58.5	0.6	..0	58.5	0.3	A9630339
19.0	59.0	2.0	18.5	59.0	2.0	18.0	59.0	1.8	17.5	59.0	1.7	A9630340
17.0	59.0	1.3	16.5	59.0	1.0	16.0	59.0	0.7	15.5	59.0	0.5	A9630341
15.0	59.0	0.5	11.5	59.0	0.3	11.0	59.0	1.0	10.5	59.0	1.4	A9630342
10.0	59.0	1.4	9.5	59.0	1.1	9.0	59.0	0.8	8.5	59.0	0.6	A9630343

8.0	59.0	0.6	7.5	59.0	0.7	7.0	59.0	0.7	6.5	59.0	0.8	A9630344
6.0	59.0	0.9	5.5	59.0	1.0	5.0	59.0	1.0	4.5	59.0	1.0	A9630345
4.0	59.0	1.0	3.5	59.0	0.8	3.0	59.0	0.6	2.5	59.0	0.3	A9630346
19.0	59.5	2.0	18.5	59.5	2.0	18.0	59.5	1.8	17.5	59.5	1.6	A9630347
17.0	59.5	1.4	16.5	59.5	1.2	16.0	59.5	0.7	15.5	59.5	0.5	A9630348
15.0	59.5	0.5	12.0	59.5	0.2	11.5	59.5	0.5	11.0	59.5	1.5	A9630349
10.5	59.5	1.5	10.0	59.5	1.5	9.5	59.5	1.3	9.0	59.5	1.2	A9630350
8.5	59.5	1.0	8.0	59.5	0.3	7.5	59.5	0.5	7.0	59.5	0.6	A9630351
6.5	59.5	0.6	6.0	59.5	0.7	5.5	59.5	0.7	5.0	59.5	0.8	A9630352
4.5	59.5	0.9	4.0	59.5	0.9	3.5	59.5	0.7	••0	59.5	0.5	A9630353
2.5	59.5	0.3	19.0	60.0	1.7	18.5	60.0	1.7	18.0	60.0	1.6	A9630354
17.5	60.0	1.5	17.0	60.0	1.3	16.5	60.0	1.1	16.0	60.0	0.6	A9630355
15.5	60.0	0.5	15.0	60.0	0.3	12.0	60.0	0.3	11.5	60.0	1.1	A9630356
11.0	60.0	1.2	10.5	60.0	1.1	10.0	60.0	1.0	9.5	60.0	1.0	A9630357
9.0	60.0	1.0	8.5	60.0	1.0	8.0	60.0	1.0	7.5	60.0	0.7	A9630358
7.0	60.0	0.6	6.5	60.0	0.5	6.0	60.0	0.6	5.5	60.0	0.6	A9630359
5.0	60.0	0.6	4.5	60.0	0.7	4.0	60.0	0.7	••5	60.0	0.6	A9630360
3.0	60.0	0.4	2.5	60.0	0.2	19.0	60.5	1.7	18.5	60.5	1.5	A9630361
18.0	60.5	1.4	17.5	60.5	1.2	17.0	60.5	1.0	16.5	60.5	0.8	A9630362
16.0	60.5	0.5	15.5	60.5	0.5	15.0	60.5	0.5	12.0	60.5	0.1	A9630363
11.5	60.5	0.2	11.0	60.5	0.5	10.5	60.5	0.5	10.0	60.5	0.5	A9630364
9.5	60.5	0.5	9.0	60.5	0.5	8.5	60.5	0.6	8.0	60.5	0.7	A9630365
7.5	60.5	0.9	7.0	60.5	0.9	6.5	60.5	0.5	6.0	60.5	0.5	A9630366
5.5	60.5	0.5	5.0	60.5	0.5	4.5	60.5	0.5	4.0	60.5	0.5	A9630367
3.5	60.5	0.5	3.0	60.5	0.3	19.0	61.0	1.2	18.5	61.0	1.0	A9630368
18.0	61.0	0.7	17.5	61.0	0.6	17.0	61.0	0.6	16.5	61.0	0.5	A9630369
16.0	61.0	0.5	15.5	61.0	0.5	15.0	61.0	0.5	14.5	61.0	0.5	A9630370
14.0	61.0	0.5	13.5	61.0	0.5	13.0	61.0	0.5	12.5	61.0	0.5	A9630371
12.0	61.0	0.5	11.5	61.0	0.5	11.0	61.0	0.5	10.5	61.0	0.5	A9630372
10.0	61.0	0.5	9.5	61.0	0.5	9.0	61.0	0.5	8.5	61.0	0.5	A9630373
8.0	61.0	0.5	7.5	61.0	0.6	7.0	61.0	0.5	6.5	61.0	0.6	A9630374
6.0	61.0	0.6	5.5	61.0	0.5	5.0	61.0	0.5	4.5	61.0	0.5	A9630375
4.0	61.0	0.2	3.5	61.0	0.1	19.0	61.5	0.8	18.5	61.5	0.5	A9630376
18.0	61.5	0.5	17.5	61.5	0.5	17.0	61.5	0.5	16.5	61.5	0.5	A9630377
16.0	61.5	0.5	15.5	61.5	0.5	15.0	61.5	0.5	14.5	61.5	0.5	A9630378
14.0	61.5	0.5	13.5	61.5	0.6	13.0	61.5	0.7	12.5	61.5	0.8	A9630379
12.0	61.5	0.7	11.5	61.5	0.6	11.0	61.5	0.6	10.5	61.5	0.5	A9630380
10.0	61.5	0.5	9.5	61.5	0.5	9.0	61.5	0.5	8.5	61.5	0.5	A9630381
8.0	61.5	0.5	7.5	61.5	0.5	7.0	61.5	0.5	6.5	61.5	0.7	A9630382
6.0	61.5	0.9	5.5	61.5	0.8	5.0	61.5	0.5	4.5	61.5	0.2	A9630383
4.0	61.5	0.2	3.5	61.5	0.3	3.0	61.5	0.4	2.5	61.5	0.4	A9630384
19.0	62.0	0.5	18.5	62.0	0.5	18.0	62.0	0.9	17.5	62.0	1.2	A9630385
17.0	62.0	1.3	16.5	62.0	1.5	16.0	62.0	1.5	15.5	62.0	1.5	A9630386
15.0	62.0	1.5	14.5	62.0	1.5	14.0	62.0	1.6	1••5	62.0	1.7	A9630387

13.0	62.0	1.7	12.5	62.0	1.8	12.0	62.0	1.8	11.5	62.0	1.6	A9630388
11.0	62.0	1.5	10.5	62.0	1.3	10.0	62.0	1.0	9.5	62.0	0.9	A9630389
9.0	62.0	0.6	8.5	62.0	0.5	8.0	62.0	0.5	7.5	62.0	0.5	A9630390
7.0	62.0	0.5	6.5	62.0	0.8	6.0	62.0	1.0	5.5	62.0	1.0	A9630391
5.0	62.0	0.7	4.5	62.0	0.3	4.0	62.0	0.5	..5	62.0	0.5	A9630392
3.0	62.0	0.5	2.5	62.0	0.3	19.0	62.5	0.6	18.5	62.5	1.0	A9630393
18.0	62.5	1.5	17.5	62.5	2.5	17.0	62.5	2.5	16.5	62.5	2.5	A9630394
16.0	62.5	2.5	15.5	62.5	2.5	15.0	62.5	2.5	14.5	62.5	2.5	A9630395
14.0	62.5	2.5	13.5	62.5	2.5	13.0	62.5	2.5	12.5	62.5	2.5	A9630396
12.0	62.5	2.5	11.5	62.5	2.5	11.0	62.5	2.0	10.5	62.5	1.5	A9630397
10.0	62.5	1.3	9.5	62.5	1.1	9.0	62.5	0.9	8.5	62.5	0.6	A9630398
8.0	62.5	0.5	7.5	62.5	0.5	7.0	62.5	0.5	6.5	62.5	0.7	A9630399
6.0	62.5	1.0	5.5	62.5	1.0	5.0	62.5	0.8	4.5	62.5	0.3	A9630400
4.0	62.5	0.2	3.5	62.5	0.1	19.0	63.0	0.8	18.5	63.0	1.2	A9630401
18.0	63.0	1.5	17.5	63.0	1.9	17.0	63.0	2.0	16.5	63.0	2.0	A9630402
16.0	63.0	2.0	15.5	63.0	1.8	15.0	63.0	1.5	14.5	63.0	1.4	A9630403
14.0	63.0	1.2	13.5	63.0	1.0	13.0	63.0	1.2	12.5	63.0	1.3	A9630404
12.0	63.0	1.4	11.5	63.0	1.4	11.0	63.0	1.4	10.5	63.0	1.3	A9630405
10.0	63.0	1.2	9.5	63.0	1.0	9.0	63.0	0.8	8.5	63.0	0.5	A9630406
8.0	63.0	0.5	7.5	63.0	0.5	7.0	63.0	0.5	6.5	63.0	0.7	A9630407
6.0	63.0	1.0	5.5	63.0	1.0	5.0	63.0	0.8	4.5	63.0	0.3	A9630408
19.0	63.5	0.6	18.5	63.5	0.9	18.0	63.5	1.0	17.5	63.5	0.8	A9630409
17.0	63.5	1.2	16.5	63.5	1.2	16.0	63.5	1.0	15.5	63.5	0.8	A9630410
15.0	63.5	0.5	14.5	63.5	0.5	14.0	63.5	0.5	1..5	63.5	0.5	A9630411
13.0	63.5	0.5	12.5	63.5	0.5	12.0	63.5	0.7	11.5	63.5	1.0	A9630412
11.0	63.5	1.0	10.5	63.5	1.0	10.0	63.5	0.9	9.5	63.5	0.8	A9630413
9.0	63.5	0.6	8.5	63.5	0.5	8.0	63.5	0.5	7.5	63.5	0.5	A9630414
7.0	63.5	0.5	6.5	63.5	1.0	6.0	63.5	1.0	5.5	63.5	1.0	A9630415
5.0	63.5	0.7	4.5	63.5	0.3	3.0	63.5	0.2	2.5	63.5	0.1	A9630416
19.0	64.0	0.5	18.5	64.0	0.5	18.0	64.0	0.5	17.5	64.0	0.5	A9630417
17.0	64.0	0.5	16.5	64.0	0.5	16.0	64.0	0.5	15.5	64.0	0.5	A9630418
15.0	64.0	0.5	14.5	64.0	0.5	14.0	64.0	0.5	1..5	64.0	0.5	A9630419
13.0	64.0	0.5	12.5	64.0	0.5	12.0	64.0	0.5	11.5	64.0	0.5	A9630420
11.0	64.0	0.5	10.5	64.0	0.5	10.0	64.0	0.5	9.5	64.0	0.5	A9630421
9.0	64.0	0.5	8.5	64.0	0.5	8.0	64.0	0.5	7.5	64.0	0.5	A9630422
7.0	64.0	1.0	6.5	64.0	1.0	6.0	64.0	1.0	5.5	64.0	0.8	A9630423
5.0	64.0	0.5	4.5	64.0	0.2	4.0	64.0	0.2	..5	64.0	0.2	A9630424
3.0	64.0	0.5	2.5	64.0	0.2	19.0	64.5	0.6	18.5	64.5	0.5	A9630425
18.0	64.5	0.5	17.5	64.5	0.5	17.0	64.5	0.5	16.5	64.5	0.7	A9630426
16.0	64.5	1.0	15.5	64.5	1.0	15.0	64.5	1.2	14.5	64.5	1.3	A9630427
14.0	64.5	1.5	13.5	64.5	1.5	13.0	64.5	1.5	12.5	64.5	1.5	A9630428
12.0	64.5	1.5	11.5	64.5	1.4	11.0	64.5	1.3	10.5	64.5	1.2	A9630429
10.0	64.5	1.0	9.5	64.5	0.8	9.0	64.5	0.7	8.5	64.5	0.5	A9630430

8.0	64.5	0.5	7.5	64.5	0.9	7.0	64.5	0.8	6.5	64.5	0.7	A9630431
6.0	64.5	0.6	5.5	64.5	0.5	5.0	64.5	0.5	4.5	64.5	0.1	A9630432
4.0	64.5	0.2	3.5	64.5	0.5	3.0	64.5	0.5	19.0	65.0	1.0	A9630433
18.5	65.0	1.0	18.0	65.0	1.2	17.5	65.0	1.0	17.0	65.0	1.0	A9630434
16.5	65.0	1.0	16.0	65.0	1.0	15.5	65.0	1.0	15.0	65.0	1.0	A9630435
14.5	65.0	1.0	14.0	65.0	1.0	13.5	65.0	1.0	1..0	65.0	1.0	A9630436
12.5	65.0	1.0	12.0	65.0	1.0	11.5	65.0	1.0	11.0	65.0	1.0	A9630437
10.5	65.0	1.2	10.0	65.0	1.2	9.5	65.0	1.1	9.0	65.0	0.3	A9630438
8.5	65.0	0.5	8.0	65.0	0.5	7.5	65.0	0.5	7.0	65.0	0.5	A9630439
6.5	65.0	0.5	6.0	65.0	0.5	5.5	65.0	0.4	5.0	65.0	0.3	A9630440
4.5	65.0	0.3	4.0	65.0	0.5	3.5	65.0	0.4	20.0	53.5	0.2	A9630441
19.5	53.5	0.3	22.0	54.0	0.2	21.5	54.0	0.4	21.0	54.0	0.5	A9630442
20.5	54.0	0.5	20.0	54.0	0.4	19.5	54.0	0.5	2..5	54.5	0.3	A9630443
23.0	54.5	0.5	22.5	54.5	0.7	22.0	54.5	1.0	21.5	54.5	1.1	A9630444
21.0	54.5	1.0	20.5	54.5	0.9	20.0	54.5	0.8	19.5	54.5	0.6	A9630445
24.5	55.0	0.3	24.0	55.0	0.8	23.5	55.0	1.2	2..0	55.0	1.4	A9630446
22.5	55.0	1.6	22.0	55.0	1.6	21.5	55.0	1.6	21.0	55.0	1.6	A9630447
20.5	55.0	1.5	20.0	55.0	1.3	19.5	55.0	1.0	26.0	55.5	0.2	A9630448
25.5	55.5	0.6	25.0	55.5	1.0	24.5	55.5	1.5	24.0	55.5	1.8	A9630449
23.5	55.5	2.0	23.0	55.5	2.0	22.5	55.5	2.0	22.0	55.5	1.8	A9630450
21.5	55.5	1.8	21.0	55.5	1.8	20.5	55.5	1.8	20.0	55.5	1.7	A9630451
19.5	55.5	1.4	27.0	56.0	0.8	26.5	56.0	1.5	26.0	56.0	2.0	A9630452
25.5	56.0	2.1	25.0	56.0	2.3	24.5	56.0	2.3	24.0	56.0	2.3	A9630453
23.5	56.0	2.4	23.0	56.0	2.3	22.5	56.0	2.2	22.0	56.0	2.0	A9630454
21.5	56.0	2.0	21.0	56.0	2.0	20.5	56.0	2.0	20.0	56.0	1.8	A9630455
19.5	56.0	1.7	28.0	56.5	0.6	27.5	56.5	1.5	27.0	56.5	2.3	A9630456
26.5	56.5	2.8	26.0	56.5	3.0	25.5	56.5	2.8	25.0	56.5	2.7	A9630457
24.5	56.5	2.6	24.0	56.5	2.5	23.5	56.5	2.4	2..0	56.5	2.3	A9630458
22.5	56.5	2.1	22.0	56.5	2.0	21.5	56.5	2.0	21.0	56.5	2.0	A9630459
20.5	56.5	2.0	20.0	56.5	2.0	19.5	56.5	1.9	28.5	57.0	0.5	A9630460
28.0	57.0	1.5	27.5	57.0	2.5	27.0	57.0	3.0	26.5	57.0	3.0	A9630461
26.0	57.0	3.0	25.5	57.0	2.9	25.0	57.0	2.8	24.5	57.0	2.7	A9630462
24.0	57.0	2.6	23.5	57.0	2.4	23.0	57.0	2.2	22.5	57.0	2.0	A9630463
22.0	57.0	2.0	21.5	57.0	2.0	21.0	57.0	2.0	20.5	57.0	2.0	A9630464
20.0	57.0	2.0	19.5	57.0	2.0	28.5	57.5	1.5	28.0	57.5	2.5	A9630465
27.5	57.5	3.0	27.0	57.5	3.0	26.5	57.5	3.0	26.0	57.5	3.0	A9630466
25.5	57.5	2.8	25.0	57.5	2.7	24.5	57.5	2.6	24.0	57.5	2.5	A9630467
23.5	57.5	2.3	23.0	57.5	2.2	22.5	57.5	2.0	22.0	57.5	2.0	A9630468
21.5	57.5	2.0	21.0	57.5	2.0	20.5	57.5	2.0	20.0	57.5	2.0	A9630469
19.5	57.5	2.0	19.0	57.5	2.0	29.0	58.0	1.5	28.5	58.0	2.5	A9630470
28.0	58.0	3.0	27.5	58.0	3.0	27.0	58.0	3.0	26.5	58.0	3.0	A9630471
26.0	58.0	3.0	25.5	58.0	2.8	25.0	58.0	2.7	24.5	58.0	2.6	A9630472
24.0	58.0	2.5	23.5	58.0	2.3	23.0	58.0	2.2	22.5	58.0	2.0	A9630473
22.0	58.0	2.0	21.5	58.0	2.0	21.0	58.0	2.0	20.5	58.0	2.0	A9630474

20.0	58.0	2.0	19.5	58.0	2.0	19.0	58.0	2.0	30.0	58.5	0.5	A9630475
29.5	58.5	1.5	29.0	58.5	2.5	28.5	58.5	3.0	28.0	58.5	3.0	A9630476
27.5	58.5	3.0	27.0	58.5	3.0	26.5	58.5	3.0	26.0	58.5	3.0	A9630477
25.5	58.5	2.8	25.0	58.5	2.7	24.5	58.5	2.6	24.0	58.5	2.5	A9630478
23.5	58.5	2.3	23.0	58.5	2.2	22.5	58.5	2.0	22.0	58.5	2.0	A9630479
21.5	58.5	2.0	21.0	58.5	2.0	20.5	58.5	2.0	20.0	58.5	2.0	A9630480
19.5	58.5	2.0	19.0	58.5	2.0	31.0	59.0	1.5	30.5	59.0	1.4	A9630481
30.0	59.0	2.5	29.5	59.0	3.0	29.0	59.0	3.0	28.5	59.0	3.0	A9630482
28.0	59.0	3.0	27.5	59.0	3.0	27.0	59.0	3.0	26.5	59.0	3.0	A9630483
26.0	59.0	2.9	25.5	59.0	2.8	25.0	59.0	2.7	24.5	59.0	2.6	A9630484
24.0	59.0	2.5	23.5	59.0	2.4	23.0	59.0	2.2	22.5	59.0	2.0	A9630485
22.0	59.0	2.0	21.5	59.0	2.0	21.0	59.0	2.0	20.5	59.0	2.0	A9630486
20.0	59.0	2.0	19.5	59.0	2.0	19.0	59.0	2.0	31.5	59.5	0.9	A9630487
31.0	59.5	2.0	30.5	59.5	3.0	30.0	59.5	3.0	29.5	59.5	3.0	A9630488
29.0	59.5	3.0	28.5	59.5	3.0	28.0	59.5	3.0	27.5	59.5	3.0	A9630489
27.0	59.5	3.0	26.5	59.5	3.0	26.0	59.5	2.9	25.5	59.5	2.8	A9630490
25.0	59.5	2.7	24.5	59.5	2.6	24.0	59.5	2.5	2..5	59.5	2.3	A9630491
23.0	59.5	2.1	22.5	59.5	2.0	22.0	59.5	2.0	21.5	59.5	2.0	A9630492
21.0	59.5	2.0	20.5	59.5	2.0	20.0	59.5	2.0	19.5	59.5	2.0	A9630493
19.0	59.5	2.0	32.0	60.0	0.1	31.5	60.0	1.5	31.0	60.0	2.6	A9630494
30.5	60.0	3.0	30.0	60.0	3.0	29.5	60.0	3.0	29.0	60.0	3.0	A9630495
28.5	60.0	3.0	28.0	60.0	3.0	27.5	60.0	3.0	27.0	60.0	3.0	A9630496
26.5	60.0	3.0	26.0	60.0	2.9	25.5	60.0	2.7	25.0	60.0	2.6	A9630497
24.5	60.0	2.5	24.0	60.0	2.4	23.5	60.0	2.2	2..0	60.0	2.0	A9630498
22.5	60.0	2.0	22.0	60.0	2.0	21.5	60.0	2.0	21.0	60.0	2.0	A9630499
20.5	60.0	2.0	20.0	60.0	2.0	19.5	60.0	2.0	19.0	60.0	1.8	A9630500
31.5	60.5	0.8	31.0	60.5	1.5	30.5	60.5	2.0	30.0	60.5	2.5	A9630501
29.5	60.5	3.0	29.0	60.5	3.0	28.5	60.5	3.0	28.0	60.5	3.0	A9630502
27.5	60.5	3.0	27.0	60.5	3.0	26.5	60.5	3.0	26.0	60.5	2.8	A9630503
25.5	60.5	2.7	25.0	60.5	2.5	24.5	60.5	2.3	24.0	60.5	2.2	A9630504
23.5	60.5	2.0	23.0	60.5	2.0	22.5	60.5	2.0	22.0	60.5	2.4	A9630505
21.5	60.5	2.5	21.0	60.5	2.5	20.5	60.5	2.5	20.0	60.5	2.3	A9630506
19.5	60.5	2.0	19.0	60.5	1.6	30.5	61.0	0.3	30.0	61.0	0.5	A9630507
29.5	61.0	1.0	29.0	61.0	1.5	28.5	61.0	2.0	28.0	61.0	2.5	A9630508
27.5	61.0	2.7	27.0	61.0	2.9	26.5	61.0	2.7	26.0	61.0	2.5	A9630509
25.5	61.0	2.2	25.0	61.0	1.5	24.5	61.0	1.4	24.0	61.0	1.5	A9630510
23.5	61.0	1.7	23.0	61.0	2.0	22.5	61.0	2.3	22.0	61.0	2.5	A9630511
21.5	61.0	2.5	21.0	61.0	2.5	20.5	61.0	2.5	20.0	61.0	2.2	A9630512
19.5	61.0	0.8	19.0	61.0	0.5	28.5	61.5	0.5	28.0	61.5	1.0	A9630513
27.5	61.5	1.5	27.0	61.5	1.8	26.5	61.5	1.9	26.0	61.5	1.6	A9630514
25.5	61.5	1.3	25.0	61.5	0.9	24.5	61.5	0.9	24.0	61.5	1.3	A9630515
23.5	61.5	1.8	23.0	61.5	2.3	22.5	61.5	2.5	22.0	61.5	2.5	A9630516
21.5	61.5	2.5	21.0	61.5	2.5	20.5	61.5	2.5	20.0	61.5	1.6	A9630517

19.5	61.5	1.0	19.0	61.5	0.6	27.5	62.0	0.3	27.0	62.0	0.6	A9630518
26.5	62.0	0.8	26.0	62.0	0.7	25.5	62.0	0.5	25.0	62.0	0.2	A9630519
24.5	62.0	0.3	24.0	62.0	1.2	23.5	62.0	1.9	2..0	62.0	2.5	A9630520
22.5	62.0	2.5	22.0	62.0	2.5	21.5	62.0	2.5	21.0	62.0	2.5	A9630521
20.5	62.0	2.2	20.0	62.0	1.2	19.5	62.0	0.5	19.0	62.0	0.5	A9630522
24.5	62.5	0.2	24.0	62.5	1.3	23.5	62.5	2.3	2..0	62.5	2.5	A9630523
22.5	62.5	.5	22.0	62.5	.5	21.5	62.5	.5	21.0	62.5	.5	A9630524
20.5	62.5	1.7	20.0	62.5	0.8	19.5	62.5	0.8	19.0	62.5	1.3	A9630525
24.5	63.0	0.7	24.0	63.0	1.7	23.5	63.0	2.5	2..0	63.0	2.5	A9630526
22.5	63.0	2.5	22.0	63.0	2.5	21.5	63.0	2.5	21.0	63.0	2.5	A9630527
20.5	63.0	1.4	20.0	63.0	0.5	19.5	63.0	0.9	19.0	63.0	1.4	A9630528
24.5	63.5	1.0	24.0	63.5	2.5	23.5	63.5	2.5	2..0	63.5	2.5	A9630529
22.5	63.5	2.5	22.0	63.5	2.5	21.5	63.5	2.5	21.0	63.5	2.2	A9630530
20.5	63.5	1.4	20.0	63.5	0.5	19.5	63.5	0.7	19.0	63.5	1.0	A9630531
25.0	64.0	0.5	24.5	64.0	1.5	24.0	64.0	2.5	2..5	64.0	2.5	A9630532
23.0	64.0	2.5	22.5	64.0	2.5	22.0	64.0	2.5	21.5	64.0	2.3	A9630533
21.0	64.0	1.8	20.5	64.0	1.4	20.0	64.0	0.9	19.5	64.0	0.5	A9630534
19.0	64.0	0.7	25.0	64.5	0.7	24.5	64.5	2.0	24.0	64.5	2.5	A9630535
23.5	64.5	2.5	23.0	64.5	2.5	22.5	64.5	2.5	22.0	64.5	2.0	A9630536
21.5	64.5	1.7	21.0	64.5	1.6	20.5	64.5	1.3	20.0	64.5	1.0	A9630537
19.5	64.5	0.7	19.0	64.5	0.7	25.0	65.0	1.0	24.5	65.0	2.2	A9630538
24.0	65.0	2.5	23.5	65.0	2.5	23.0	65.0	1.5	22.5	65.0	1.0	A9630539
22.0	65.0	1.8	21.5	65.0	1.8	21.0	65.0	1.2	20.5	65.0	1.2	A9630540
20.0	65.0	1.0	19.5	65.0	1.0	19.0	65.0	1.0	25.0	65.5	1.0	A9630541
24.5	65.5	2.0	24.0	65.5	2.0	23.5	65.5	1.0	2..0	65.5	0.4	A9630542
21.5	65.5	0.1	21.0	65.5	0.4	20.5	65.5	0.7	20.0	65.5	0.7	A9630543
19.5	65.5	0.8	19.0	65.5	0.8	25.0	66.0	0.5	24.5	66.0	0.7	A9630544
24.0	66.0	0.6	20.5	66.0	0.3	20.0	66.0	0.6	19.5	66.0	0.6	A9630545
19.0	66.0	0.6	19.0	66.5	0.3	19.0	65.5	0.9	18.5	65.5	1.0	A9630546
18.0	65.5	1.1	17.5	65.5	1.3	17.0	65.5	1.4	16.5	65.5	1.4	A9630547
16.0	65.5	1.4	15.5	65.5	1.3	15.0	65.5	1.3	14.5	65.5	1.3	A9630548
14.0	65.5	1.3	13.5	65.5	1.3	13.0	65.5	1.3	12.5	65.5	1.3	A9630549
12.0	65.5	1.3	11.5	65.5	1.2	11.0	65.5	1.1	10.5	65.5	1.0	A9630550
10.0	65.5	1.0	9.5	65.5	0.9	9.0	65.5	0.9	8.5	65.5	0.9	A9630551
8.0	65.5	0.9	7.5	65.5	1.0	7.0	65.5	1.1	6.5	65.5	1.1	A9630552
6.0	65.5	1.1	5.5	65.5	0.8	5.0	65.5	0.3	4.5	65.5	0.2	A9630553
4.0	65.5	0.1	19.0	66.0	0.5	18.5	66.0	0.8	18.0	66.0	1.1	A9630554
17.5	66.0	1.8	17.0	66.0	1.7	16.5	66.0	1.7	16.0	66.0	1.7	A9630555
15.5	66.0	1.7	15.0	66.0	1.7	14.5	66.0	1.7	14.0	66.0	1.6	A9630556
13.5	66.0	1.6	13.0	66.0	1.6	12.5	66.0	1.6	12.0	66.0	1.7	A9630557
11.5	66.0	1.7	11.0	66.0	1.7	10.5	66.0	1.7	10.0	66.0	1.6	A9630558
9.5	66.0	1.7	9.0	66.0	1.7	8.5	66.0	1.8	8.0	66.0	2.0	A9630559
7.5	66.0	2.0	7.0	66.0	2.0	6.5	66.0	2.0	6.0	66.0	1.3	A9630560
5.5	66.0	0.9	5.0	66.0	0.5	19.0	66.5	0.4	18.5	66.5	1.3	A9630561

18.0	66.5	1.8	17.5	66.5	2.0	17.0	66.5	2.0	16.5	66.5	2.0	A9630562
16.0	66.5	1.9	15.5	66.5	1.8	15.0	66.5	1.8	14.5	66.5	1.8	A9630563
14.0	66.5	1.8	13.5	66.5	1.9	13.0	66.5	1.9	12.5	66.5	1.9	A9630564
12.0	66.5	2.0	11.5	66.5	2.0	11.0	66.5	2.0	10.5	66.5	2.0	A9630565
10.0	66.5	2.0	9.5	66.5	2.0	9.0	66.5	2.0	8.5	66.5	2.0	A9630566
8.0	66.5	2.0	7.5	66.5	2.0	7.0	66.5	2.0	6.5	66.5	2.0	A9630567
6.0	66.5	1.3	5.5	66.5	0.9	5.0	66.5	0.4	4.0	66.5	0.1	A9630568
2.5	66.5	0.2	19.0	67.0	0.5	18.5	67.0	1.3	18.0	67.0	1.7	A9630569
17.5	67.0	1.8	17.0	67.0	1.8	16.5	67.0	2.0	16.0	67.0	2.0	A9630570
15.5	67.0	2.0	15.0	67.0	2.0	14.5	67.0	2.0	14.0	67.0	2.0	A9630571
13.5	67.0	2.0	13.0	67.0	2.0	12.5	67.0	2.0	12.0	67.0	2.0	A9630572
11.5	67.0	2.0	11.0	67.0	2.0	10.5	67.0	2.0	10.0	67.0	2.0	A9630573
9.5	67.0	2.0	9.0	67.0	2.0	8.5	67.0	2.0	8.0	67.0	1.9	A9630574
7.5	67.0	1.8	7.0	67.0	1.6	6.5	67.0	1.4	6.0	67.0	1.1	A9630575
16.0	67.5	1.6	15.5	67.5	1.7	15.0	67.5	1.7	14.5	67.5	1.7	A9630578
5.5	67.0	0.7	4.0	67.0	0.2	3.5	67.0	0.3	3.0	67.0	0.4	A9630576
2.5	67.0	0.4	17.5	67.5	0.5	17.0	67.5	1.2	16.5	67.5	1.5	A9630577
14.0	67.5	1.7	13.5	67.5	1.6	13.0	67.5	1.5	12.5	67.5	1.5	A9630579
12.0	67.5	1.5	11.5	67.5	1.5	11.0	67.5	1.5	10.5	67.5	1.5	A9630580
10.0	67.5	1.5	9.5	67.5	1.4	9.0	67.5	1.4	8.5	67.5	1.3	A9630581
8.0	67.5	1.3	7.5	67.5	1.2	7.0	67.5	1.1	6.5	67.5	0.9	A9630582
6.0	67.5	0.6	5.5	67.5	0.1	4.5	67.5	0.3	4.0	67.5	0.4	A9630583
3.5	67.5	0.5	3.0	67.5	0.5	2.5	67.5	0.4	17.0	68.0	0.2	A9630584
16.5	68.0	0.5	16.0	68.0	0.7	15.5	68.0	0.7	15.0	68.0	1.0	A9630585
14.5	68.0	1.1	14.0	68.0	1.0	13.5	68.0	0.7	13.0	68.0	0.5	A9630586
12.5	68.0	0.6	12.0	68.0	0.6	11.5	68.0	0.7	11.0	68.0	0.7	A9630587
10.5	68.0	0.7	10.0	68.0	0.7	9.5	68.0	0.7	9.0	68.0	0.7	A9630588
8.5	68.0	0.7	8.0	68.0	0.7	7.5	68.0	0.6	7.0	68.0	0.5	A9630589
6.5	68.0	0.3	5.0	68.0	0.3	4.5	68.0	0.5	4.0	68.0	0.5	A9630590
3.5	68.0	0.4	3.0	68.0	0.2	11.0	68.5	0.1	10.5	68.5	0.2	A9630591
10.0	68.5	0.2	9.5	68.5	0.2	9.0	68.5	0.1	5.5	68.5	0.2	A9630592
5.0	68.5	0.4	4.5	68.5	0.4	4.0	68.5	0.3	3.5	68.5	0.2	A9630593
3.0	68.5	0.1	5.5	69.0	0.1	7.0	77.0	0.3	6.5	77.0	0.5	A9630594
6.0	77.0	0.4	5.5	77.0	0.4	5.0	77.0	0.4	4.5	77.0	0.4	A9630595
4.0	77.0	0.4	3.5	77.0	0.4	3.0	77.0	0.3	2.5	77.0	0.1	A9630596
8.5	77.5	0.1	8.0	77.5	0.6	7.5	77.5	1.0	7.0	77.5	1.3	A9630597
6.5	77.5	1.5	6.0	77.5	1.5	5.5	77.5	1.5	5.0	77.5	1.2	A9630598
4.5	77.5	1.1	4.0	77.5	0.9	3.5	77.5	0.7	3.0	77.5	0.5	A9630599
2.5	77.5	0.3	9.0	78.0	0.6	8.5	78.0	1.6	8.0	78.0	2.0	A9630600
7.5	78.0	2.0	7.0	78.0	1.5	6.5	78.0	1.5	6.0	78.0	1.5	A9630601
5.5	78.0	1.5	5.0	78.0	1.4	4.5	78.0	1.3	4.0	78.0	1.0	A9630602
3.5	78.0	0.8	3.0	78.0	0.5	2.5	78.0	0.3	9.0	78.5	1.5	A9630603
8.5	78.5	2.0	8.0	78.5	2.0	7.5	78.5	2.0	7.0	78.5	1.9	A9630604

6.5	78.5	1.8	6.0	78.5	1.7	5.5	78.5	1.6	5.0	78.5	1.4	A9630605
4.5	78.5	1.3	4.0	78.5	1.1	3.5	78.5	0.8	..0	78.5	0.5	A9630606
2.5	78.5	0.3	9.0	79.0	1.3	8.5	79.0	1.8	8.0	79.0	1.9	A9630607
7.5	79.0	1.9	7.0	79.0	1.8	6.5	79.0	1.7	6.0	79.0	1.6	A9630608
5.5	79.0	1.5	5.0	79.0	1.4	4.5	79.0	1.2	4.0	79.0	1.0	A9630609
3.5	79.0	0.8	3.0	79.0	0.5	2.5	79.0	0.3	9.0	79.5	1.0	A9630610
8.5	79.5	1.4	8.0	79.5	1.6	7.5	79.5	1.6	7.0	79.5	1.5	A9630611
6.5	79.5	1.5	6.0	79.5	1.5	5.5	79.5	1.5	5.0	79.5	1.4	A9630612
4.5	79.5	1.3	4.0	79.5	1.0	3.5	79.5	0.7	..0	79.5	0.5	A9630613
2.5	79.5	0.3	9.5	80.0	0.3	9.0	80.0	1.6	8.5	80.0	2.0	A9630614
8.0	80.0	1.5	7.5	80.0	1.5	7.0	80.0	1.5	6.5	80.0	1.5	A9630615
6.0	80.0	1.5	5.5	80.0	1.5	5.0	80.0	1.5	4.5	80.0	1.3	A9630616
4.0	80.0	1.0	3.5	80.0	0.7	3.0	80.0	0.5	2.5	80.0	0.3	A9630617
9.0	80.5	1.3	8.5	80.5	2.0	8.0	80.5	2.0	7.5	80.5	1.7	A9630618
7.0	80.5	1.5	6.5	80.5	1.5	6.0	80.5	1.5	5.5	80.5	1.5	A9630619
5.0	80.5	1.5	4.5	80.5	1.3	4.0	80.5	1.0	..5	80.5	0.7	A9630620
3.0	80.5	0.5	2.5	80.5	0.3	9.0	81.0	0.3	8.5	81.0	1.5	A9630621
8.0	81.0	2.0	7.5	81.0	2.0	7.0	81.0	1.5	6.5	81.0	1.5	A9630622
6.0	81.0	1.5	5.5	81.0	1.5	5.0	81.0	1.4	4.5	81.0	1.3	A9630623
4.0	81.0	1.1	3.5	81.0	0.9	3.0	81.0	0.4	2.5	81.0	0.3	A9630624
8.5	81.5	0.4	8.0	81.5	1.5	7.5	81.5	1.8	7.0	81.5	1.5	A9630625
6.5	81.5	1.5	6.0	81.5	1.5	5.5	81.5	1.5	5.0	81.5	1.4	A9630626
4.5	81.5	1.3	4.0	81.5	1.2	3.5	81.5	1.1	..0	81.5	0.8	A9630627
2.5	81.5	0.3	8.0	82.0	0.5	7.5	82.0	1.3	7.0	82.0	1.5	A9630628
6.5	82.0	1.5	6.0	82.0	1.5	5.5	82.0	1.5	5.0	82.0	1.4	A9630629
4.5	82.0	1.3	4.0	82.0	1.2	3.5	82.0	1.1	..0	82.0	0.8	A9630630
2.5	82.0	0.3	7.0	82.5	0.5	6.5	82.5	0.5	6.0	82.5	0.8	A9630631
5.5	82.5	0.9	5.0	82.5	1.0	4.5	82.5	1.0	4.0	82.5	1.0	A9630632
3.5	82.5	1.0	3.0	82.5	0.8	2.5	82.5	0.5	4.5	83.0	0.4	A9630633
4.0	83.0	0.8	3.5	83.0	1.0	3.0	83.0	1.0	2.5	83.0	0.7	A9630634
4.0	83.5	0.5	3.5	83.5	1.0	3.0	83.5	1.0	2.5	83.5	0.5	A9630635
4.0	84.0	0.4	3.5	84.0	1.0	3.0	84.0	1.0	2.5	84.0	0.4	A9630636
4.0	84.5	0.3	3.5	84.5	0.9	3.0	84.5	1.0	2.5	84.5	0.5	A9630637
3.5	85.0	0.5	3.0	85.0	0.5	2.5	85.0	0.3	..5	89.5	0.3	A9630638
3.0	89.5	0.8	2.5	89.5	0.4	4.5	90.0	0.5	4.0	90.0	1.0	A9630639
3.5	90.0	1.0	3.0	90.0	1.0	2.5	90.0	0.5	4.0	90.5	0.5	A9630640
3.5	90.5	1.0	3.0	90.5	1.0	2.5	90.5	0.4	2.5	91.0	0.2	A9630641
2.5	96.0	0.2	4.0	96.5	0.4	3.5	96.5	0.5	..0	96.5	0.5	A9630642
2.5	96.5	0.2	5.5	97.0	0.6	5.0	97.0	0.8	4.5	97.0	1.0	A9630643
4.0	97.0	1.0	3.5	97.0	1.0	3.0	97.0	0.7	2.5	97.0	0.5	A9630644
6.5	97.5	0.1	6.0	97.5	1.2	5.5	97.5	1.5	5.0	97.5	1.5	A9630645
4.5	97.5	1.4	4.0	97.5	1.3	3.5	97.5	1.1	..0	97.5	0.7	A9630646
2.5	97.5	0.4	6.5	98.0	0.6	6.0	98.0	1.5	5.5	98.0	1.5	A9630647
5.0	98.0	1.5	4.5	98.0	1.3	4.0	98.0	1.3	..5	98.0	1.0	A9630648

3.0	98.0	0.7	2.5	98.0	0.4	6.5	98.5	0.3	6.0	98.5	1.5	A9630649
5.5	98.5	1.5	5.0	98.5	1.5	4.5	98.5	1.4	4.0	98.5	1.2	A9630650
3.5	98.5	1.0	3.0	98.5	0.7	2.5	98.5	0.4	6.0	99.0	1.3	A9630651
5.5	99.0	1.5	5.0	99.0	1.5	4.5	99.0	1.3	4.0	99.0	1.2	A9630652
3.5	99.0	1.0	3.0	99.0	0.7	2.5	99.0	0.4	2.0	99.0	0.1	A9630653
6.0	99.5	0.4	5.5	99.5	1.5	5.0	99.5	1.5	4.5	99.5	1.4	A9630654
4.0	99.5	1.3	3.5	99.5	1.1	3.0	99.5	0.8	2.5	99.5	0.5	A9630655
2.0	99.5	0.1	5.5	100.0	0.2	5.0	100.0	0.3	4.5	100.0	0.6	A9630656
4.0	100.0	0.8	3.5	100.0	0.6	3.0	100.0	0.4	2.5	100.0	0.4	A9630657
4.0	100.5	0.2	3.5	100.5	0.2	2.5	100.5	0.3	2.0	100.5	0.3	A9630658
3.5	103.0	1.0	3.0	103.0	1.0	2.5	103.0	0.6	4.0	103.5	0.5	A9630660
3.5	102.5	0.4	3.0	102.5	1.0	2.5	102.5	0.4	4.0	103.0	0.6	A9630659
3.5	103.5	1.0	3.0	103.5	1.0	2.5	103.5	0.5	..5	104.0	0.5	A9630661
3.0	104.0	0.7	2.5	104.0	0.4	3.5	118.0	0.1	..0	118.0	0.1	A9630662
2.5	118.0	0.1	3.5	118.5	0.8	3.0	118.5	1.0	2.5	118.5	0.4	A9630663
4.0	119.0	0.3	3.5	119.0	1.0	3.0	119.0	0.4	2.5	119.0	0.2	A9630664
12.0	128.5	0.1	11.5	128.5	0.5	8.5	128.5	0.1	7.5	128.5	0.2	A9630665
7.0	128.5	0.3	6.5	128.5	0.4	6.0	128.5	0.5	5.5	128.5	0.5	A9630666
5.0	128.5	0.5	4.5	128.5	0.4	4.0	128.5	0.3	..5	128.5	0.2	A9630667
3.0	128.5	0.2	13.5	129.0	0.7	13.0	129.0	1.4	12.5	129.0	1.7	A9630668
12.0	129.0	2.0	11.5	129.0	2.0	11.0	129.0	2.0	10.5	129.0	1.7	A9630669
10.0	129.0	1.5	9.5	129.0	1.3	9.0	129.0	1.3	8.5	129.0	1.1	A9630670
8.0	129.0	1.0	7.5	129.0	1.0	7.0	129.0	1.0	6.5	129.0	1.0	A9630671
6.0	129.0	1.0	5.5	129.0	1.0	5.0	129.0	1.0	4.5	129.0	1.0	A9630672
4.0	129.0	1.0	3.5	129.0	0.7	3.0	129.0	0.6	2.5	129.0	0.3	A9630673
13.5	129.5	2.0	13.0	129.5	2.5	12.5	129.5	2.5	12.0	129.5	1.8	A9630674
11.5	129.5	2.0	11.0	129.5	2.0	10.5	129.5	2.0	10.0	129.5	2.0	A9630675
9.5	129.5	1.9	9.0	129.5	1.8	8.5	129.5	1.7	8.0	129.5	1.6	A9630676
7.5	129.5	1.5	7.0	129.5	1.5	6.5	129.5	1.4	6.0	129.5	1.3	A9630677
5.5	129.5	1.3	5.0	129.5	1.2	4.5	129.5	1.1	4.0	129.5	1.1	A9630678
3.5	129.5	1.0	3.0	129.5	0.7	2.5	129.5	0.4	14.0	130.0	0.3	A9630679
13.5	130.0	1.5	13.0	130.0	2.0	12.5	130.0	2.0	12.0	130.0	2.0	A9630680
11.5	130.0	2.0	11.0	130.0	2.0	10.5	130.0	2.0	10.0	130.0	2.0	A9630681
9.5	130.0	1.5	9.0	130.0	1.5	8.5	130.0	1.5	8.0	130.0	1.5	A9630682
7.5	130.0	1.5	7.0	130.0	1.5	6.5	130.0	1.4	6.0	130.0	1.3	A9630683
5.5	130.0	1.3	5.0	130.0	1.2	4.5	130.0	1.2	4.0	130.0	1.1	A9630684
3.5	130.0	1.0	3.0	130.0	0.7	2.5	130.0	0.4	1..5	130.5	2.3	A9630685
13.0	130.5	2.5	12.5	130.5	2.5	12.0	130.5	2.5	11.5	130.5	2.4	A9630686
11.0	130.5	2.3	10.5	130.5	2.2	10.0	130.5	2.0	9.5	130.5	1.5	A9630687
9.0	130.5	1.5	8.5	130.5	1.5	8.0	130.5	1.5	7.5	130.5	1.5	A9630688
7.0	130.5	1.4	6.5	130.5	1.3	6.0	130.5	1.0	5.5	130.5	1.0	A9630689
5.0	130.5	1.0	4.5	130.5	1.0	4.0	130.5	1.0	..5	130.5	0.9	A9630690
3.0	130.5	0.7	2.5	130.5	0.5	14.0	131.0	0.3	1..5	131.0	0.8	A9630691

13.0	131.0	1.7	12.5	131.0	2.5	12.0	131.0	1.8	11.5	131.0	1.7	A9630692
11.0	131.0	1.5	10.5	131.0	1.4	10.0	131.0	1.3	9.5	131.0	1.3	A9630693
9.0	131.0	1.2	8.5	131.0	1.2	8.0	131.0	1.1	7.5	131.0	1.1	A9630694
7.0	131.0	1.1	6.5	131.0	1.1	6.0	131.0	1.0	5.5	131.0	1.0	A9630695
5.0	131.0	1.0	4.5	131.0	0.9	4.0	131.0	0.8	..5	131.0	0.7	A9630696
3.0	131.0	0.5	2.5	131.0	0.3	5.5	131.5	0.2	5.0	131.5	0.1	A9630697
4.5	131.5	0.2	4.0	131.5	0.2	3.5	131.5	0.2	..0	131.5	0.2	A9630698
2.5	131.5	0.2	3.5	135.5	0.2	3.0	135.5	0.2	2.5	135.5	0.2	A9630699
5.5	136.0	0.2	5.0	136.0	0.3	4.5	136.0	0.4	4.0	136.0	0.4	A9630700
3.5	136.0	0.4	3.0	136.0	0.3	2.5	136.0	0.3	6.0	136.5	0.3	A9630701
5.5	136.5	0.5	5.0	136.5	0.6	4.5	136.5	0.6	4.0	136.5	0.5	A9630702
3.5	136.5	0.5	3.0	136.5	0.5	2.5	136.5	0.3	7.5	137.0	0.3	A9630703
7.0	137.0	0.4	6.5	137.0	0.5	6.0	137.0	0.8	5.5	137.0	1.0	A9630704
5.0	137.0	1.0	4.5	137.0	0.9	4.0	137.0	0.8	..5	137.0	0.5	A9630705
3.0	137.0	0.5	2.5	137.0	0.2	8.5	137.5	0.3	8.0	137.5	0.5	A9630706
7.5	137.5	0.8	7.0	137.5	1.0	6.5	137.5	1.0	6.0	137.5	1.0	A9630707
5.5	137.5	1.0	5.0	137.5	0.9	4.5	137.5	0.5	4.0	137.5	0.5	A9630708
3.5	137.5	0.5	3.0	137.5	0.5	2.5	137.5	0.2	9.0	138.0	0.6	A9630709
8.5	138.0	0.9	8.0	138.0	1.0	7.5	138.0	1.0	7.0	138.0	0.8	A9630710
6.5	138.0	0.6	6.0	138.0	0.5	5.5	138.0	0.5	5.0	138.0	0.6	A9630711
4.5	138.0	0.6	4.0	138.0	0.5	3.5	138.0	0.5	..0	138.0	0.5	A9630712
2.5	138.0	0.1	12.0	138.5	0.1	11.5	138.5	0.1	11.0	138.5	0.1	A9630713
10.5	138.5	0.6	10.0	138.5	1.0	9.5	138.5	1.0	9.0	138.5	0.6	A9630714
8.5	138.5	0.5	8.0	138.5	0.5	7.5	138.5	0.5	7.0	138.5	0.6	A9630715
6.5	138.5	0.6	6.0	138.5	0.5	5.5	138.5	0.5	5.0	138.5	0.5	A9630716
4.5	138.5	0.5	4.0	138.5	0.5	3.5	138.5	0.5	..0	138.5	0.5	A9630717
14.0	139.0	0.1	13.5	139.0	0.1	13.0	139.0	0.1	12.5	139.0	0.2	A9630718
12.0	139.0	0.2	11.5	139.0	0.3	11.0	139.0	0.3	10.5	139.0	0.4	A9630719
10.0	139.0	0.5	9.5	139.0	0.5	9.0	139.0	0.6	8.5	139.0	0.6	A9630720
8.0	139.0	0.9	7.5	139.0	1.0	7.0	139.0	1.0	6.5	139.0	1.0	A9630721
6.0	139.0	0.7	5.5	139.0	0.6	5.0	139.0	0.5	4.5	139.0	0.5	A9630722
4.0	139.0	0.5	3.5	139.0	0.3	15.5	139.5	0.1	15.0	139.5	0.1	A9630723
14.5	139.5	0.1	14.0	139.5	0.2	13.5	139.5	0.2	1..0	139.5	0.3	A9630724
12.5	139.5	0.3	12.0	139.5	0.4	11.5	139.5	0.4	11.0	139.5	0.5	A9630725
10.5	139.5	0.7	10.0	139.5	0.8	9.5	139.5	1.0	9.0	139.5	1.0	A9630726
8.5	139.5	1.1	8.0	139.5	1.4	7.5	139.5	1.5	7.0	139.5	1.5	A9630727
6.5	139.5	1.5	6.0	139.5	1.3	5.5	139.5	0.5	5.0	139.5	0.5	A9630728
4.5	139.5	0.5	4.0	139.5	0.5	3.5	139.5	0.5	..0	139.5	0.3	A9630729
17.0	140.0	0.1	16.5	140.0	0.2	16.0	140.0	0.3	15.5	140.0	0.3	A9630730
15.0	140.0	0.3	14.5	140.0	0.3	14.0	140.0	0.4	1..5	140.0	0.4	A9630731
13.0	140.0	0.4	12.5	140.0	0.5	12.0	140.0	0.5	11.5	140.0	1.0	A9630732
11.0	140.0	1.5	10.5	140.0	2.0	10.0	140.0	2.0	9.5	140.0	1.5	A9630733
9.0	140.0	1.5	8.5	140.0	1.5	8.0	140.0	1.5	7.5	140.0	1.5	A9630734
7.0	140.0	1.5	6.5	140.0	1.5	6.0	140.0	1.0	5.5	140.0	0.7	A9630735

5.0	140.0	0.5	4.5	140.0	0.4	4.0	140.0	0.4	.5	140.0	0.3	A9630736
3.0	140.0	0.3	2.5	140.0	0.1	17.5	140.5	0.1	17.0	140.5	0.3	A9630737
16.5	140.5	0.3	16.0	140.5	0.4	15.5	140.5	0.4	15.0	140.5	0.4	A9630738
14.5	140.5	0.4	14.0	140.5	0.4	13.5	140.5	0.7	1..0	140.5	1.3	A9630739
12.5	140.5	1.7	12.0	140.5	2.0	11.5	140.5	2.0	11.0	140.5	2.0	A9630740
10.5	140.5	2.0	10.0	140.5	2.0	9.5	140.5	1.5	9.0	140.5	1.5	A9630741
8.5	140.5	1.3	8.0	140.5	1.1	7.5	140.5	1.0	7.0	140.5	0.9	A9630742
6.5	140.5	0.7	6.0	140.5	0.5	5.5	140.5	0.4	5.0	140.5	0.3	A9630743
4.5	140.5	0.3	4.0	140.5	0.2	3.5	140.5	0.2	.0	140.5	0.1	A9630744
17.5	141.0	0.3	17.0	141.0	0.4	16.5	141.0	1.3	16.0	141.0	1.8	A9630745
15.5	141.0	2.0	15.0	141.0	2.2	14.5	141.0	2.5	14.0	141.0	2.5	A9630746
13.5	141.0	2.5	13.0	141.0	2.5	12.5	141.0	2.0	12.0	141.0	2.0	A9630747
11.5	141.0	2.0	11.0	141.0	2.0	10.5	141.0	2.0	10.0	141.0	2.0	A9630748
9.5	141.0	1.4	9.0	141.0	1.0	8.5	141.0	0.6	8.0	141.0	0.3	A9630749
7.5	141.0	0.3	7.0	141.0	0.3	6.5	141.0	0.2	6.0	141.0	0.1	A9630750
5.5	141.0	0.1	18.0	141.5	0.4	17.5	141.5	1.6	17.0	141.5	2.6	A9630751
16.5	141.5	2.8	16.0	141.5	2.5	15.5	141.5	2.5	15.0	141.5	2.5	A9630752
14.5	141.5	2.5	14.0	141.5	2.5	13.5	141.5	2.5	1..0	141.5	2.5	A9630753
12.5	141.5	2.5	12.0	141.5	2.5	11.5	141.5	2.4	11.0	141.5	2.3	A9630754
10.5	141.5	2.2	10.0	141.5	2.1	9.5	141.5	1.5	9.0	141.5	0.8	A9630755
18.5	142.0	0.1	18.0	142.0	1.5	17.5	142.0	2.7	17.0	142.0	3.0	A9630756
16.5	142.0	3.0	16.0	142.0	2.9	15.5	142.0	2.8	15.0	142.0	2.7	A9630757
14.5	142.0	2.6	14.0	142.0	2.5	13.5	142.0	2.5	1..0	142.0	2.5	A9630758
12.5	142.0	2.5	12.0	142.0	2.5	11.5	142.0	2.0	11.0	142.0	2.0	A9630759
10.5	142.0	2.0	10.0	142.0	2.0	9.5	142.0	1.5	9.0	142.0	0.9	A9630760
8.5	142.0	0.3	8.0	142.0	0.3	7.5	142.0	0.4	7.0	142.0	0.5	A9630761
6.5	142.0	0.6	6.0	142.0	0.6	5.5	142.0	0.7	5.0	142.0	0.6	A9630762
4.5	142.0	0.5	4.0	142.0	0.2	18.5	142.5	0.3	18.0	142.5	2.2	A9630763
17.5	142.5	3.0	17.0	142.5	3.0	16.5	142.5	3.0	16.0	142.5	2.9	A9630764
15.5	142.5	2.9	15.0	142.5	2.7	14.5	142.5	2.7	14.0	142.5	2.6	A9630765
13.5	142.5	2.6	13.0	142.5	2.5	12.5	142.5	2.5	12.0	142.5	2.5	A9630766
11.5	142.5	2.4	11.0	142.5	2.3	10.5	142.5	2.2	10.0	142.5	2.0	A9630767
9.5	142.5	1.6	9.0	142.5	0.9	8.5	142.5	0.8	8.0	142.5	0.9	A9630768
7.5	142.5	1.1	7.0	142.5	1.3	6.5	142.5	1.3	6.0	142.5	1.4	A9630769
5.5	142.5	1.0	5.0	142.5	0.8	4.5	142.5	0.3	4.0	142.5	0.3	A9630770
18.5	143.0	0.9	18.0	143.0	2.5	17.5	143.0	3.0	17.0	143.0	3.0	A9630771
16.5	143.0	3.0	16.0	143.0	2.9	15.5	143.0	2.8	15.0	143.0	2.7	A9630772
14.5	143.0	2.6	14.0	143.0	2.5	13.5	143.0	2.5	1..0	143.0	2.5	A9630773
12.5	143.0	2.5	12.0	143.0	2.3	11.5	143.0	2.2	11.0	143.0	2.0	A9630774
10.5	143.0	2.0	10.0	143.0	1.6	9.5	143.0	1.7	9.0	143.0	1.5	A9630775
8.5	143.0	1.3	8.0	143.0	1.5	7.5	143.0	1.5	7.0	143.0	1.5	A9630776
6.5	143.0	1.5	6.0	143.0	1.5	5.5	143.0	1.5	5.0	143.0	1.5	A9630777
4.5	143.0	1.5	4.0	143.0	0.9	3.5	143.0	0.6	.0	143.0	0.3	A9630778

18.5	143.5	2.4	18.0	143.5	2.8	17.5	143.5	3.0	17.0	143.5	3.0	A9630779
16.5	143.5	3.0	16.0	143.5	2.9	15.5	143.5	2.8	15.0	143.5	2.8	A9630780
14.5	143.5	2.4	14.0	143.5	2.4	13.5	143.5	2.5	1..0	143.5	2.0	A9630781
12.5	143.5	2.0	12.0	143.5	2.0	11.5	143.5	2.0	11.0	143.5	2.0	A9630782
10.5	143.5	2.0	10.0	143.5	2.0	9.5	143.5	2.0	9.0	143.5	2.0	A9630783
8.5	143.5	1.7	8.0	143.5	1.6	7.5	143.5	1.5	7.0	143.5	1.5	A9630784
6.5	143.5	1.5	6.0	143.5	1.5	5.5	143.5	1.5	5.0	143.5	1.5	A9630785
4.5	143.5	1.4	4.0	143.5	1.0	3.5	143.5	0.5	19.0	144.0	0.1	A9630786
18.5	144.0	0.6	18.0	144.0	1.3	17.5	144.0	1.5	17.0	144.0	1.5	A9630787
16.5	144.0	1.5	16.0	144.0	1.2	15.5	144.0	1.0	15.0	144.0	0.5	A9630788
14.5	144.0	0.7	14.0	144.0	1.0	13.5	144.0	2.0	1..0	144.0	2.0	A9630789
12.5	144.0	2.0	12.0	144.0	2.0	11.5	144.0	2.0	11.0	144.0	2.0	A9630790
10.5	144.0	2.0	10.0	144.0	2.0	9.5	144.0	2.0	9.0	144.0	2.0	A9630791
8.5	144.0	2.0	8.0	144.0	1.5	7.5	144.0	1.5	7.0	144.0	1.5	A9630792
6.5	144.0	1.5	6.0	144.0	1.5	5.5	144.0	1.5	5.0	144.0	1.5	A9630793
4.5	144.0	1.4	4.0	144.0	1.0	3.5	144.0	0.8	..0	144.0	0.6	A9630794
2.5	144.0	0.3	18.5	144.5	0.3	18.0	144.5	0.4	17.5	144.5	0.5	A9630795
17.0	144.5	1.0	16.5	144.5	1.0	16.0	144.5	1.0	15.5	144.5	1.0	A9630796
15.0	144.5	1.0	14.5	144.5	1.0	14.0	144.5	1.0	1..5	144.5	0.5	A9630797
13.0	144.5	1.6	12.5	144.5	2.0	12.0	144.5	2.0	11.5	144.5	2.0	A9630798
11.0	144.5	2.0	10.5	144.5	2.0	10.0	144.5	2.0	9.5	144.5	2.0	A9630799
9.0	144.5	2.0	8.5	144.5	2.0	8.0	144.5	1.5	7.5	144.5	1.5	A9630800
7.0	144.5	1.5	6.5	144.5	1.5	6.0	144.5	1.5	5.5	144.5	1.5	A9630801
5.0	144.5	1.5	4.5	144.5	1.5	4.0	144.5	1.2	..5	144.5	0.8	A9630802
3.0	144.5	0.6	2.5	144.5	0.2	18.5	145.0	0.2	18.0	145.0	0.5	A9630803
17.5	145.0	1.0	17.0	145.0	1.0	16.5	145.0	1.0	16.0	145.0	1.0	A9630804
15.5	145.0	1.0	15.0	145.0	1.0	14.5	145.0	1.0	14.0	145.0	1.0	A9630805
13.5	145.0	0.5	13.0	145.0	0.8	12.5	145.0	1.5	12.0	145.0	2.0	A9630806
11.5	145.0	2.0	11.0	145.0	2.0	10.5	145.0	2.0	10.0	145.0	2.0	A9630807
9.5	145.0	2.0	9.0	145.0	2.0	8.5	145.0	1.7	8.0	145.0	1.5	A9630808
7.5	145.0	1.5	7.0	145.0	1.5	6.5	145.0	1.5	6.0	145.0	1.5	A9630809
5.5	145.0	1.5	5.0	145.0	1.5	4.5	145.0	1.5	4.0	145.0	1.3	A9630810
3.5	145.0	0.8	3.0	145.0	0.5	18.0	145.5	0.1	17.5	145.5	0.3	A9630811
17.0	145.5	0.3	16.5	145.5	0.3	16.0	145.5	0.3	15.5	145.5	0.3	A9630812
15.0	145.5	0.3	14.5	145.5	0.3	14.0	145.5	0.3	1..5	145.5	0.3	A9630813
13.0	145.5	0.4	12.5	145.5	0.4	12.0	145.5	0.5	11.5	145.5	0.7	A9630814
11.0	145.5	0.8	10.5	145.5	1.0	10.0	145.5	1.0	9.5	145.5	1.0	A9630815
9.0	145.5	1.0	8.5	145.5	1.0	8.0	145.5	1.1	7.5	145.5	1.3	A9630816
7.0	145.5	1.5	6.5	145.5	1.5	6.0	145.5	1.5	5.5	145.5	1.5	A9630817
5.0	145.5	1.5	4.5	145.5	1.5	4.0	145.5	1.2	..5	145.5	0.5	A9630818
3.0	145.5	0.2	9.5	146.0	0.1	9.0	146.0	0.3	8.5	146.0	0.5	A9630819
8.0	146.0	0.7	7.5	146.0	0.8	7.0	146.0	1.2	6.5	146.0	1.5	A9630820
6.0	146.0	1.5	5.5	146.0	1.5	5.0	146.0	1.5	4.5	146.0	1.0	A9630821
4.0	146.0	0.7	3.5	146.0	0.3	16.5	146.5	0.1	16.0	146.5	0.1	A9630822

8.5	146.5	0.1	8.0	146.5	0.4	7.5	146.5	0.5	7.0	146.5	0.6	A9630823
6.5	146.5	0.6	6.0	146.5	0.7	5.5	146.5	0.7	5.0	146.5	0.7	A9630824
4.5	146.5	0.5	4.0	146.5	0.2	16.5	147.0	0.3	16.0	147.0	0.7	A9630825
15.5	147.0	1.0	15.0	147.0	1.0	14.5	147.0	1.0	14.0	147.0	1.0	A9630826
13.5	147.0	1.0	13.0	147.0	1.0	12.5	147.0	1.0	12.0	147.0	0.8	A9630827
11.5	147.0	0.8	11.0	147.0	0.8	10.5	147.0	0.9	10.0	147.0	0.5	A9630828
9.5	147.0	0.3	7.5	147.0	0.2	7.0	147.0	0.3	6.5	147.0	0.3	A9630829
6.0	147.0	0.2	5.5	147.0	0.1	5.0	147.0	0.1	4.0	147.0	0.3	A9630830
3.5	147.0	0.3	3.0	147.0	0.1	16.0	147.5	0.4	15.5	147.5	1.0	A9630831
15.0	147.5	1.0	14.5	147.5	1.0	14.0	147.5	1.0	1..5	147.5	1.0	A9630832
13.0	147.5	1.0	12.5	147.5	1.0	12.0	147.5	1.0	11.5	147.5	1.0	A9630833
11.0	147.5	0.8	10.5	147.5	0.6	10.0	147.5	0.5	9.5	147.5	0.5	A9630834
9.0	147.5	0.3	8.5	147.5	0.3	5.0	147.5	0.1	4.5	147.5	0.4	A9630835
4.0	147.5	0.5	3.5	147.5	0.5	3.0	147.5	0.5	2.5	147.5	0.2	A9630836
16.0	148.0	0.1	15.5	148.0	0.3	15.0	148.0	0.8	14.5	148.0	1.0	A9630837
14.0	148.0	1.0	13.5	148.0	1.0	13.0	148.0	1.0	12.5	148.0	1.0	A9630838
12.0	148.0	1.0	11.5	148.0	1.0	11.0	148.0	0.9	10.5	148.0	0.8	A9630839
10.0	148.0	0.6	9.5	148.0	0.5	9.0	148.0	0.5	8.5	148.0	0.5	A9630840
8.0	148.0	0.4	7.5	148.0	0.4	7.0	148.0	0.4	6.5	148.0	0.4	A9630841
6.0	148.0	0.4	5.5	148.0	0.4	5.0	148.0	0.5	4.5	148.0	0.5	A9630842
4.0	148.0	0.5	3.5	148.0	0.5	3.0	148.0	0.3	14.5	148.5	0.1	A9630843
14.0	148.5	0.5	13.5	148.5	0.8	13.0	148.5	1.0	12.5	148.5	1.0	A9630844
12.0	148.5	1.0	11.5	148.5	1.0	11.0	148.5	0.8	10.5	148.5	0.8	A9630845
10.0	148.5	0.5	9.5	148.5	0.5	9.0	148.5	0.5	8.5	148.5	0.5	A9630846
8.0	148.5	0.5	7.5	148.5	0.5	7.0	148.5	0.5	6.5	148.5	0.5	A9630847
6.0	148.5	0.5	5.5	148.5	0.5	5.0	148.5	0.5	4.5	148.5	0.5	A9630848
4.0	148.5	0.5	3.5	148.5	0.5	3.0	148.5	0.5	2.5	148.5	0.3	A9630849
13.0	149.0	0.3	12.5	149.0	0.4	12.0	149.0	0.5	11.5	149.0	0.5	A9630850
11.0	149.0	0.5	10.5	149.0	0.5	10.0	149.0	0.5	9.5	149.0	0.5	A9630851
9.0	149.0	0.5	8.5	149.0	0.5	8.0	149.0	0.5	7.5	149.0	0.5	A9630852
7.0	149.0	0.5	6.5	149.0	0.5	6.0	149.0	0.5	5.5	149.0	0.5	A9630853
5.0	149.0	0.5	4.5	149.0	0.5	4.0	149.0	0.5	..5	149.0	0.5	A9630854
3.0	149.0	0.5	2.5	149.0	0.3	8.5	149.5	0.3	8.0	149.5	0.3	A9630855
7.5	149.5	0.3	7.0	149.5	0.3	6.5	149.5	0.3	6.0	149.5	0.3	A9630856
5.5	149.5	0.3	5.0	149.5	0.3	4.5	149.5	0.3	4.0	149.5	0.3	A9630857
3.5	149.5	0.3	3.0	149.5	0.3							A9630858

RAWINSONDE DATA VALKARIA.FLA. 8 AUG 63 1010 EST. ASCENT NBR 0128. TEST NBR 5270

ALT FT.	TEMP C	DEW PT	PRESS	RH	AB HUM	DEN	CARD NU
31.0	33.2	24.5	1014.9	59	21.50	1141.1	8001
500.0	28.9	20.7	998.9	60	17.42	1141.4	8002
1000.0	27.9	20.1	981.9	62	16.81	1126.1	8003
1500.0	26.5	18.9	965.1	62	15.71	1112.5	8004
2000.0	25.0	17.6	948.6	62	14.50	1099.3	8005
2500.0	23.6	16.1	932.4	62	13.29	1086.5	8006
3000.0	22.0	16.3	916.2	69	13.56	1073.0	8007
3500.0	20.6	16.0	900.2	74	13.36	1059.5	8008
4000.0	19.3	14.9	884.5	74	12.47	1045.9	8009
4500.0	18.5	13.2	869.0	70	11.21	1031.1	8010
5000.0	17.3	12.0	853.8	70	10.42	1017.8	8011
5500.0	16.0	10.8	838.7	71	9.69	1004.5	8012
6000.0	15.5	8.7	823.8	64	8.48	988.9	8013
6500.0	15.5	7.2	809.1	57	7.59	972.0	8014
7000.0	14.9	5.4	794.8	52	6.75	956.9	8015
7500.0	14.4	3.1	780.7	46	5.76	942.1	8016
8000.0	13.5	2.5	766.6	47	5.53	928.3	8017
8500.0	12.0	2.2	752.8	50	5.42	916.4	8018
9000.0	11.1	2.0	739.2	53	5.39	902.7	8019
9500.0	10.0	2.4	725.8	58	5.54	889.6	8020
10000.0	8.9	1.4	712.6	59	5.20	876.9	8021
10500.0	8.5	1.1	699.7	59	5.09	862.3	8022
11000.0	7.9	- .7	686.9	54	4.47	848.6	8023
11500.0	6.5	- 1.8	674.3	55	4.14	837.3	8024
12000.0	5.1	- 2.0	661.8	59	4.09	825.9	8025
12500.0	4.1	- 3.4	649.6	57	3.69	813.8	8026
13000.0	3.4	- 5.1	637.6	53	3.28	801.1	8027
13500.0	2.7	-11.8	625.7	34	2.08	788.8	8028
14000.0	2.0	-19.1	614.1	19	1.07	776.7	8029
14500.0	1.2	-22.0	602.6	15	.82	764.4	8030
15000.0	1.0	99.9	591.3	99	99.99	751.2	8031
15500.0	- .0	99.9	580.2	99	99.99	740.3	8032
16000.0	- .8	99.9	569.2	99	99.99	728.2	8033
16500.0	- 1.7	99.9	558.5	99	99.99	716.6	8034
17000.0	- 2.4	-31.0	547.9	8	.36	704.7	8035
17500.0	- 3.1	-31.5	537.5	9	.35	693.4	8036
18000.0	- 4.0	-32.1	527.2	9	.33	682.3	8037
18500.0	- 4.9	-33.0	517.1	8	.30	671.5	8038
19000.0	- 6.2	-35.8	507.1	7	.23	661.7	8039
19500.0	- 7.3	-37.9	497.3	6	.18	651.6	8040

RAWINSONDE DATA VALKARIA.FLA. 7 AUG 63 1010 EST. ASCENT NBR 0123. TEST NBR 5226

ALT FT.	TEMP C	DEW PT	PRESS	RH	AB HUM	DEN	CARD NU
0.0	30.6	24.2	1018.6	67	21.28	1155.2	
500.0	28.1	21.5	1002.5	66	18.32	1148.3	
1000.0	26.4	19.2	985.4	63	15.97	1136.2	
1500.0	25.3	18.5	968.5	65	15.32	1121.1	
2000.0	24.1	17.4	951.9	65	14.40	1106.6	
2500.0	23.5	16.8	935.3	65	13.86	1089.9	
3000.0	22.5	15.6	919.2	64	12.92	1075.3	
3500.0	21.3	14.6	903.4	65	12.18	1061.4	
4000.0	20.0	13.5	887.6	65	11.39	1047.6	
4500.0	18.9	12.3	872.0	65	10.59	1033.7	
5000.0	17.8	11.2	856.8	65	9.87	1019.9	
5500.0	17.1	10.3	841.7	63	9.30	1004.6	
6000.0	15.9	9.0	826.8	63	8.55	991.2	
6500.0	14.9	7.7	812.1	61	7.87	977.3	
7000.0	14.1	5.7	797.6	56	6.90	963.1	
7500.0	13.5	3.3	783.4	50	5.87	948.5	
8000.0	12.2	1.8	769.3	48	5.27	935.7	
8500.0	11.0	1.1	755.4	50	5.05	922.8	
9000.0	9.5	.3	741.7	52	4.79	911.0	
9500.0	8.9	- 2.3	728.2	46	4.07	896.8	
10000.0	8.7	- 6.7	714.8	32	2.82	881.8	
10500.0	8.3	- 9.3	701.8	27	2.32	867.1	
11000.0	8.1	-15.5	689.0	17	1.42	852.4	
11500.0	7.7	-20.2	676.4	11	.96	838.4	
12000.0	6.8	-17.9	663.9	15	1.16	825.5	
12500.0	5.6	-23.1	651.8	10	.74	813.9	
13000.0	5.0	-29.9	639.6	5	.39	800.7	
13500.0	4.4	-30.2	627.9	5	.38	787.6	
14000.0	3.5	-30.3	616.1	6	.38	775.6	
14500.0	2.3	-30.0	604.7	6	.39	764.2	
15000.0	1.5	-31.6	593.3	6	.34	752.3	
15500.0	1.2	-31.0	582.2	7	.36	739.0	
16000.0	.1	-31.1	571.3	7	.36	728.0	
16500.0	- .9	-31.0	560.5	7	.36	717.2	
17000.0	- 1.7	-31.0	549.9	7	.36	705.9	
17500.0	- 2.2	-30.8	539.5	9	.37	693.6	
18000.0	- 2.9	-31.9	529.2	8	.33	682.1	
18500.0	- 3.9	-34.9	519.2	6	.25	671.6	
19000.0	- 5.1	-34.5	509.2	7	.26	661.8	
19500.0	- 6.3	-34.4	499.4	8	.26	651.9	

RAWINSONDE DATA VALKARIA.FLA. 9 AUG 63 1050 EST. ASCENT NBR 0133. TEST NBR 5271

ALT FT.	TEMP C	DEW PT	PRESS	RH	AB HUM	DEN	CARD NU
31.0	32.7	24.6	1013.5	61	21.72	1141.3	9001
500.0	29.1	21.2	997.8	61	17.95	1138.9	9002
1000.0	27.6	20.0	980.8	62	16.67	1125.8	9003
1500.0	26.3	19.0	964.0	63	15.81	1112.0	9004
2000.0	24.8	18.2	947.5	66	15.05	1098.7	9005
2500.0	23.2	17.7	931.2	70	14.75	1085.5	9006
3000.0	21.8	17.3	915.1	74	14.45	1071.8	9007
3500.0	20.9	16.5	899.3	75	13.79	1057.0	9008
4000.0	19.3	15.0	883.6	75	12.55	1044.9	9009
4500.0	19.0	13.0	868.1	67	11.08	1028.3	9010
5000.0	17.0	10.9	852.8	66	9.69	1017.8	9011
5500.0	17.0	10.8	837.8	66	9.65	999.9	9012
6000.0	16.2	10.0	823.0	66	9.19	985.1	9013
6500.0	15.5	9.3	808.4	66	8.79	970.2	9014
7000.0	14.4	8.2	794.0	66	8.20	956.9	9015
7500.0	13.3	7.1	779.8	65	7.62	943.7	9016
8000.0	12.5	6.1	765.8	64	7.11	929.5	9017
8500.0	11.6	5.1	752.0	63	6.68	915.7	9018
9000.0	10.5	4.2	738.4	64	6.29	903.1	9019
9500.0	9.5	6.3	725.1	80	7.34	889.1	9020
10000.0	8.5	3.3	711.9	70	6.03	876.8	9021
10500.0	7.4	1.1	699.0	64	5.12	864.6	9022
11000.0	6.5	.5	686.0	64	4.90	851.4	9023
11500.0	6.2	.1	673.5	64	4.78	836.9	9024
12000.0	5.7	- 1.0	661.0	61	4.40	823.2	9025
12500.0	4.8	- 3.1	648.9	56	3.77	810.9	9026
13000.0	3.8	- 3.2	636.9	59	3.75	798.8	9027
13500.0	2.6	- 4.0	625.0	61	3.54	787.3	9028
14000.0	1.5	- 5.3	613.4	60	3.23	775.8	9029
14500.0	.5	- 6.5	601.9	59	2.96	764.3	9030
15000.0	- .3	- 8.0	590.5	56	2.66	752.4	9031
15500.0	- 1.2	- 9.0	579.5	55	2.47	741.0	9032
16000.0	- 2.2	-10.5	568.5	52	2.19	729.6	9033
16500.0	- 2.9	-21.8	557.7	28	1.13	718.4	9034
17000.0	- 3.4	-30.8	547.1	9	.37	706.4	9035
17500.0	- 4.0	-30.1	536.7	11	.40	694.4	9036
18000.0	- 5.2	-25.1	526.4	21	.71	683.9	9037
18500.0	- 6.2	-18.8	516.3	36	1.12	673.3	9038
19000.0	- 6.8	-21.6	506.2	30	.90	661.6	9039

19500.0 - 7.5	-26.0	496.5	21	.60	650.8		9040
20000.0 - 11.0							
20500.0 - 11.8							
21000.0 - 13.0							
21500.0 - 14.0							
22000.0 - 15.2							
22500.0 - 16.2							
23000.0 - 17.3							
23500.0 - 18.4							
24000.0 - 19.5							
24500.0 - 20.6							
25000.0 - 21.7							
25500.0 - 22.8							
26000.0 - 23.8							
26500.0 - 24.8							
27000.0 - 25.8							
27500.0 - 26.8							
28000.0 - 27.8							
28500.0 - 28.9							
29000.0 - 30.0							
29500.0 - 31.0							
30000.0 - 32.4							
30500.0 - 33.4							
31000.0 - 34.4							
31500.0 - 35.4							
32000.0 - 36.4							65

APPENDIX III

COMPUTER PROGRAMS

LIR COMPUTER PROGRAM

```
B       JOB,LIR 72 ,GALBIATI LJ,705.1,D82,015,E402
B       TYPE,COMPILGO,FORTRAN
T       SUBTYPE,FIOD
B     7BIOD,TAPE,,,,,SAVE
B     8BIOD,TAPE,,,,,SAVE
B    10 BIOD,TAPE,,,,,SAVE
B    11 BIOD,TAPE,,,,,SAVE
       END
T       SUBTYPE,FORTRAN
      DIMENSION ALT(50 ),TE(2430),G(2430), FL(2430), ALP(2430)                1
     C,           B(2430) ,C(2430),        TT(2430), Y(2430),YY(2430)       2.1
     C        , EL(2430),            WA(2430),YYYY(2430)                     3.1
    5  FORMAT  (2F5.1,1F6.2,2F5.1,1F6.2,2F5.1,1F6.2,2F5.1,1F6.2)
    6    FORMAT    ( 2F10.1)
    7    FORMAT  ( 5X$  ALT(FT)  TEMP           AUGUST 7,1963  $)
    8   FORMAT (1X$ALTITUDE     TEMPERATURE
     C       LOCATION     ALTITUDE   LIQ H20  $)
    9   FORMAT ( 4 F 10.2)
   10    FORMAT (1F10.1, 4F7.1, 1F15.1,1F7.1   )
   11   FORMAT (       I 119,1F8.1)
   12    FORMAT ( 1F15.1   )
  111    FORMAT ( 1F20.1   )
   13    FORMAT   ( 1 F 8.1   )
    15 FORMAT (3F10.1)
   16     FORMAT ( 1F40.1,1F10.4 ,1F20.4, 3F10.4, 1F14.4, 2I6, I4 )
   17    FORMAT  ( 3F11.1 )
   18    FORMAT ( 1 F 57.4,1F10.1, 1F17.4,146 )
   98    FORMAT (1F70.2, 2F10.2 )
   99    FORMAT ( 2F10.2,1F50.2,2F10.2   )
  171   FORMAT (105X$ JJ         YYY$)
  172   FORMAT ( I110,I10)
  173    FORMAT ( 1F80.4, 2F 12.4   )
  174   FORMAT   ( 1 F 128.4 )
  175   FORMAT ( 5X $    EL(K)     B( K )     WA ( K ) $)
  176   FORMAT ( 5X $  Z        FL(N)         C(N)       B(K) $)
  177  FORMAT(5X$                                      FL(N)     TE(L)     F(
     CL)        Z         TT(L)     YY(L)     YYY         C(L)       L
     C  JJ $)
  178   FORMAT ( 5X $
     C                                                      JJ
```

```
C  JJJ  $)
179   FORMAT ( IF I4.2.I128 )
180   FORMAT (2 F 15.5 )
181   FORMAT (5X$  B(K)       YYY          YYY(K)      K  $)
182    FORMAT ( 1F6.1. 2F15.5.  16 )
183   FORMAT ( 5X$  THE   POINT IS QUESTIONABLE AND WILL NOT BE USED -        1
C  -- THE VALUES OF                                          B(K)    Z        2
C K$)                                                                        3
184    FORMAT ( 1F118.1 . 1F5.1. I5 )
600   FORMAT  ( 4 ( 3X.3F6.1))
601   FORMAT ( 1F 6.1.  1F10.5.   I114  )
602    FORMAT ( 1F6.1.  1F10.5.  I 50  )
603   FORMAT ( 3 X $ B(K)      YYYY(K)                                         1
C                                                                            2
C         K$)                                                               3
604    FORMAT ( 1F20.2. 1F10.1.  1F15.5. I 20  . I 14 )
605   FORMAT (5X$     B(K)      D  $)
606   FORMAT  ( I F 4.0 )
703    FORMAT ( $1   THE  DATA OF THIS PROGRAM IS AUGUST 7.1965 $//)
777   FORMAT ( $1   AUGUST 7. 1963 $)
      JDATE = 0807063
      PRINT 703
700   CONTINUE
      DO 701 K = 1.40
      ALT(K) = 0.0
701    CONTINUE
       DO 702 K = 1. 2430
         TE(K)  = 0.0
       G   (K)  = 0.0
      FL   (K)  = 0.0
      ALP  (K)  = 0.0
      B    (K)  = 0.0
      C    (K)  = 0.0
      TT   (K)  = 0.0
       Y   (K)  = 0.0
      YY   (K)  = 0.0
      EL   (K)  = 0.0
       WA  (K)  = 0.0
      YYYY (K)  = 0.0
702    CONTINUE
      READ 606 . ( DATE )
       READ10.(ALT(K).TE(K).DP   .PR   .RH   .AH   .DEN   . K=1.40)
        TEL = 0.0
        K = 1
```

```
608      CONTINUE
      READ 5 , ( EL(K) , B(K), WA(K)  , EL(K+1), B(K+1), WA(K+1) ,
     C EL(K+2),B(K+2), WA(K+2),  EL(K+3), B(K+3), WA(K+3) )
       TELA= EL(K)
       TELB= EL(K +1)
       TELC =EL(K + 2 )
       TELD =EL(K +3 )
      IF ( TELA. GT . ( 777.7))  GO TO 609
      IF ( TELB. GT . ( 777.7))  GO TO 609
      IF ( TELC. GT . ( 777.7))  GO TO 609
      IF ( TELD. GT . ( 777.7))  GO TO 609
       K = K + 4
       GO TO 608
       PRINT 703
       DO 449  K = 1, 40
         KA = K
       WRITE  ( 10  ) KA ,ALT(K),TE(K),JDATE
 449     CONTINUE
        DO 450  K = 1 , 800
        KB = K + 40
       WRITE ( 10 ) KB,EL(K), B(K), WA(K), JDATE
 450     CONTINUE
 609   CONTINUE
        IT  = 2330
      ITA = IT / 5
       ITB  = 2 * ITA
       ITC  = 3 * ITA
       ITD  = 4 * ITA
       DO 8321 LL = 1,25
       PRINT  8
       PRINT  777
       PRINT99,(ALT(K),TE(K),EL(K), B(K), WA(K)            , K=I,40)
      PRINT 600,(B(K),EL(K),WA(K), B(K+153),EL(K+153),WA(K+153),              1
     CB(K+ 932),EL(K+ 932),WA(K+ 932), B(K+1398),EL(K+1398),WA(K+1398),       2
     C  K = 1 , 465  )
 8321  CONTINUE
        JJ = 0.0
         JJJ = 0.0
        YYY = 0.0
      Z = 1
      I = 0
 51     I = I + 1
 52       JJ = 0
```

```
      Z = Z - ZZ
50    Z = Z + ( 0.5)
      Y(K)  = 1.0
31    DO 30  K = I , IT
      YYYY(K) = YYY
      IF (  123.0 - Z )  33,33,34
34    CONTINUE
      I = K
      IZ = 40 + I
      IF ((B(K).GT.(Z-(0.1))) .AND. (B(K).LT.(Z+(0.1))) ) GO TO 32
      ZZZ = ( Z - B(K))
       IF ( ZZZ .LT. (0.001)) ZZZ = 0.0
      ZZ = ZZZ + 1.0
      IF (  B(K) .GT. ( Z +(0.1))) GO TO 60
      IF (  B(K) .LT. ( Z -(0.1))) GO TO 61
60     PRINT 603
       PRINT  601, B(K-1),  YYYY(K),  K
C     PUNCH 602,    B(K-1),  YYYY(K),  K
      WRITE ( 8 )  B(K-1 ) , YYYY(K), K
      PRINT  177
      YYY = 0
      Z = B(K)
      GO TO 32
61     CONTINUE
      PRINT 177
      PRINT 183
      PRINT 184, B(K), Z , K
      GO TO 52
32    N = K
      JJ = JJ + 1
      FL(N) = EL(K)
      C(N) = WA(K)
      M = 1
      W = ( 0.0)
      WW = 0.5
      DO 100 L=1,40
 101   W = W + WW
      ALP(L)  = ALT(L) / 1000.0
      IF (  (FL(N).GT. (ALP(L)-0.1)  )  .AND.  (  FL(N).LT.(ALP(L)+0.1))
     C ) GO TO 320
       GO TO 100
320   TE(M) = TE(K)
       C(L) = WA(K)
      TT(L) = 0.0310 - ( 0.0021 * TE(L))
```

```
      IF (TT(L) .LT. (0.01 )  )      TT (L)  =  0.01
      YY(L)=TT(L)*C(L)*((1.524* 3.6) / 0.96)
      G(M) = YY (L)
       YYY = YYY + YY(L)
      PRINT16,FL(N),TE(L),      Z  ,TT(L) ,YY(L), YYY,C(L),L,JJ ,K
      PUNCH  604, B(K),  FL(N),  YY(L),  K  ,DATE
       WRITE ( 7 )  B(K), FL(N), YY(L),  K , DATE
       N= N + 1
  100   CONTINUE
   40   N = N - 1
       DO 41  M = 1,N
       Y(M) = Y(K)
   41  Y(M) =  Y(M) * G(M)
   30   CONTINUE
       YYY = 0.0
        JJJ = JJJ + 1
   33    CONTINUE
        PRINT 603
       K = 2
 8011 FORMAT (1X$ LOCATION   DISPERSIVITY  $/)
       DO 8332 LL = 1,25
       PRINT  777
       PRINT  8011
   35   IF (2332 = K )  39,  36 ,  36
   36    IF ( B(K) . EQ . B(K-1 ) ) GO TO 37
         IF (  B(K) .  GT  . B( K-1))  GO TO 38
   37    K = K + 1
       GO TO  35
   38      PRINT  601,  B(K-1), YYYY(K), K
        K = K  + 1
         GO TO 35
 8332  CONTINUE
   39    CONTINUE
      END FILE 7
        END FILE  7
        END FILE  8
      END FILE 8
       REWIND    7
       REWIND    8
         END FILE  10
         END FILE  10
      REWIND 10
         END FILE  11
```

```
      END FILE  11
     REWIND 10
      RETURN
      END
T        SUBTYPE.DATA
  71
```

```
      PHS   COMPUTER PROGRAM

B         JOB,PHS 82 ,GALBIATI LJ,705,1,D82,015,E402
B         TYPE,COMPILGO,FORTRAN
T         SUBTYPE,FIOD
B       7BIOD,TAPE,,,,,,SAVE
B       8BIOD,TAPE,,,,,,SAVE
B    I    IOD,$READER
B    2    IOD,$PRINTER
          END
T         SUBTYPE,BIN
')9,   7 'G=#9 7'G=#9 7                                                    SHDUMP01
')8(7          2+94+90   ) F 56 72 6760'+2 7 E                             SHDUMP02
')9X+ 7 4                                                                  SHDUMP03
T         SUBTYPE,FORTRAN,LSTRAP
C
C      THIS PROGRAM IS A PHASE SHIFT ANALYSIS FOR WTR.
C
       DIMENSION ILOC(3000),JLOC(3000),BIJLOC(3000),BIJ(600,41),AP(600)
      C , TN ( 15 )
      C , DNS( 15,50)
       CALL SHDUMP
       DATA NINPT(1), NOUT(2), TEST(9999,99)
       INTEGER  SMAX, DELTAS, SBAR, S,R,PPRIME,QPRIME,P,Q ,RR
       REAL ILOC, JLOC, LN
       REAL IORIGN, JORIGN
       READ(NINPT,10) SMAX,DELTAS,IORIGN,JORIGN,COEF,IPUNCH,IDUMP
    10 FORMAT( 2I10, 3F10.2, 2I1 )
       WRITE(NOUT,11)
    11 FORMAT(1H1)
       DO 300  N = 1 , 15
       IF(N.EQ. 1   )TN(1) =  45.0
       IF(N.EQ. 2   )TN(2) =  26.6
       IF(N.EQ. 3   )TN(3) =  18.4
       IF(N.EQ. 4   )TN(4) =  14.1
       IF(N.EQ. 5   )TN(5) =  11.3
       IF(N.EQ. 6   )TN(6) =   9.5
       IF(N.EQ. 7   )TN(7) =   8.2
       IF(N.EQ. 8   )TN(8) =   7.1
       IF(N.EQ. 9   )TN(9) =   6.3
       IF(N.EQ.10   )TN(10)=   5.5
       IF(N.EQ.11   )TN(11)=   3.2
       IF(N.EQ.12   )TN(12)=   4.8
```

```
      IF(N.EQ.13    )TN(13) = 4.2
      IF(N.EQ.14    )TN(14)=   4.1
      IF(N.EQ.15    )TN(15)=   3.8
300    CONTINUE
       DO 700 N = 1 , 15
       DO 700 J = 1 , 50
        DNS (N,J) = 0.0
700      CONTINUE
      IS = 1
      IA A    = IS
      IA B    = IS+  1
      IA C    = IS+  2
      IA D    = IS+  3
      IA E    = IS+  4
      IA F    = IS+  5
      IA G    = IS+  6
      IA H    = IS+  7
      IA I    = IS+  8
      IA J    = IS+  9
      IA K    = IS+  10
      IA L    = IS+  11
      IA M    = IS+  12
      IA N    = IS+  13
      IA O    = IS+  14
      IA P    = IS+  15
      DO 12 I = 1,600
      DO 12 J=1,41
      BIJ(I,J) = 0.0
   12 CONTINUE
      IJ = 1
   16 READ(NINPT,14) ILOC(IJ), JLOC(IJ), BIJLOC(IJ)
   14 FORMAT( F20.2, F10.1, F15.5 )
      IF( ILOC(IJ).EQ.TEST)  GO TO 18
      IJ = IJ + 1
      GO TO 16
   18 IJ = IJ - 1
      DO 24 II = 1, IJ
      I = 2.0 * ( ILOC(II) - IORIGN ) + 1.00001
      J = 2.0 * ( JLOC(II) - JORIGN ) + 1.00001
      IF (( I.GT.600).OR.(J.GT.40)) GO TO 19
      BIJ (I,J)  = BIJLOC(II)
      GO TO 24
   19 WRITE( NOUT,23) I, J, II
```

```
   23 FORMAT(   6H    I = I10,    8H  J =    I10,  8H II =      I10   )
   24 CONTINUE
  214 FORMAT ( 1X, 2F6.1, 1F8.3, I4,                                          6
     C    1F8.1, 1F6.1, 1F8.3,I4,                                            7
     C    1F8.1, 1F6.1, 1F8.3,I4,                                            8
     C    1F8.1, 1F6.1, 1F8.3,I4,                                            9
     C    1F8.1, 1F6.1, 1F8.3,I4          )                                  10
      DO 215 N = 1 , IJ                                                      11
       WRITE ( NOUT, 214) ILOC(N), JLOC(N), BIJLOC(N), N                     12
      WRITE ( 7 )  ILOC(N) , JLOC(N), BIJLOC(N) , N, IDATE
  215    CONTINUE                                                            13
      DO 90 J = 1 , 100
      WRITE(NOUT, 25)
   25 FORMAT(  42H1  PHASE SHIFT ANALYSIS PROGRAM FOR W.T.R. // )
      WRITE( NOUT,26)
   26 FORMAT(    1H , 5X,1HN,10X,1HS,10X,1HD    // )
      DO 100  N=1, 15
       S = MIN0 ( 40 * ( 15 - N ) , J ) + 1
       IF ( ( S - 1 ) . NE . J ) GO TO 200
      LN = SQRT(1.0 +(1.0/FLOAT(N)) ** 2 )
      SBAR =  MIN0 ( 40 *(15 - N), SMAX ) + 1
      IS = S
      APS= 0.0
      ISUB = IS
      DO 70 L= 1,40
      R = L
      RR= R+1
      PPRIME = N * ( L-1)
      QPRIME = ISUB + PPRIME
      NMAX = MIN0(( 600 - QPRIME) ,  N )
      DO 60 K = 1, NMAX
      P = K + PPRIME
      Q = K + QPRIME
      A = (FLOAT(N-K+1)) / FLOAT(N)
      B = (FLOAT(K-1)) / FLOAT(N)
      AP(P)=A* BIJ(Q,R) + B * BIJ(Q, RR)
      APS = AP(P) + APS
   60 CONTINUE
   70 CONTINUE
      APS = APS -0.5 * AP(1)  - 0.5 * AP(P )
      D = COEF * LN * APS
      IF(IPUNCH.EQ.0)  GO TO 84
      PUNCH 82, N,IS,D
   82 FORMAT( I7, I11, F13.3  ,F17.1, 30 X,I2 )
```

```
      IF ( IS . GT . 50)  GO TO 703
        DNS ( N , IS ) = D
703     CONTINUE
  84  WRITE(NOUT,82) N, IS,D , TN(N) , IDATE
      WRITE ( 8 )  N , IS , D, IDATE
 100  CONTINUE
  90  CONTINUE
200    CONTINUE
83    FORMAT ( I5,15F8.2)
 85    FORMAT ( $1         DISPERSIVITY  AS A FUNCTION OF ELEVATION ANGLE
     C FOR RAYS STARTING AT  DIFFERENT POINTS LOCATED 500 FEET APART-AUG
     C 8,83$)
 88   FORMAT (1X$ANGLE     MW     MW- 1    MW -2    MW- 3    MW- 4    MW- 5
     CMW- 6    MW- 7    MW- 8    MW- 9    MW-10    MW-11    MW-12    MW-13    MW
     C-14$//)
       WRITE ( NOUT,85)
       WRITE (NOUT,88)
       DO  9199   KKK = 1 , 25
          PRINT 85
         PRINT 88
       PRINT  83,(        N,DNS(N,IAA), DNS(N,IAB),DNS(N,IAC), DNS(N,IAD),
     CDNS(N,IAE),DNS(N,IAF),DNS(N,IAG),DNS(N,IAH), DNS(N,IAI),
     C DNS(N,IAJ), DNS(N,IAK), DNS(N,IAL), DNS(N, IAM) DNS(N,IAN),
     C DNS(N, IAO)   , N = 1, 15 )
9199    CONTINUE
705      CONTINUE
      IF( IDUMP.EQ.1)  STOP
         END FILE  7
         END FILE 7
      REWIND 7
         END FILE  8
         END FILE  8
      REWIND 8
      CALL EXIT
      END
T        SUBTYPE,DATA
       150          1     18.0       0.0        1.0      82
```

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13. ABSTRACT

The magnitude and characteristic of the effect of cloud-droplet microwave dispersion on line integral refractometer (LIR) measurements was determined for environmental conditions measured at the Eastern Test Range on August 7, 8, and 9, 1963.

It was definitely determined that the presence of cloud droplets would introduce errors in the LIR measurements, but that, on each of the above days, there were regions of the sky where the error intorduced was small compared to the total refraction correction.

The report describes technical areas where basic data were inadequate and discusses the impact of assumptions made in these areas on the calculated values.

Basic work in this area at The MITRE Corporation in 1962 is described in Appendix I.

DD FORM 1 JAN 64 1473

UNCLASSIFIED

Security Classification

14. KEY WORDS	LINK A		LINK B		LINK C	
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